

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



United States
Department of
Agriculture

Food and
Nutrition
Service

Office of
Analysis and
Evaluation

WIC Nutrition Education Assessment Study

Baseline Data Report

March 1998



Abt Associates Inc.

WIC Nutrition Education Assessment Study

Baseline Data Report

March 1998

Prepared for

**Janet Tognetti Schiller
US Department of Agriculture
Food and Nutrition Service
3101 Park Center Drive
Alexandria, VA 22302**

Prepared by

**Mary Kay Fox
Amy Fowler
Nancy Burstein
Abt Associates Inc.
55 Wheeler Street
Cambridge, MA 02138**

TABLE OF CONTENTS

	Page
List of Exhibits	ii
Acknowledgements	iv
Executive Summary	v
Part I	
Overview of the WIC Nutrition Education Assessment Study	1
Selection of Study Sites	2
Sample Recruitment	4
Data Collection Components and Schedule	4
Instrument Development	5
Part II	
Summary of Baseline Data	8
Background Characteristics	9
Nutrition Knowledge	18
Attitudes and Related Constructs	30
Behaviors	42
Appendix A	
Baseline and Background Questionnaire	
Appendix B	
Supplementary Exhibits	

LIST OF EXHIBITS

	Page
Exhibit 1	Demographic Characteristics 10
Exhibit 2	Household Characteristics 12
Exhibit 3	Characteristics of Sample Members In Comparison to Data from 1994 Census of WIC Participants 14
Exhibit 4	Pregnancy and Childbirth History 16
Exhibit 5	Use of Prenatal Care 17
Exhibit 6	Prior and Current WIC Participation of Sample Members and Their Children 19
Exhibit 7	Demographic Characteristics by Prior WIC Participation 20
Exhibit 8	Pregnancy History and Current Use of Prenatal Care by Prior WIC Participation 22
Exhibit 9	Knowledge About Healthy Eating During Pregnancy 23
Exhibit 10	Baseline Nutrition Knowledge Measures: Answers to Individual Items by Topic Area 25
Exhibit 11	Baseline Nutrition Knowledge Measures: Mean Scores and Ranges by Topic Area 28
Exhibit 12	Mean Baseline Knowledge Scores by Prior WIC Participation 29
Exhibit 13	Baseline Attitude Measures Regarding Healthy Eating 31
Exhibit 14	Baseline Self-Efficacy Measures Regarding Healthy Eating 33
Exhibit 15	Support for Positive Health Behaviors 36
Exhibit 16	Perceptions About Weight Gain and Health Habits 38
Exhibit 17	Behavioral Belief Items and Evaluation Items 39
Exhibit 18	Mean Behavioral Belief and Evaluation Factor Scores by Planned Infant Feeding Method 40
Exhibit 19	Food Consumption Patterns Over the Past Month 43
Exhibit 20	Changes in Food Consumption Since Pregnancy 49

LIST OF EXHIBITS
(continued)

	Page
Exhibit 21	Changes in Appetite/Cravings Associated with Pregnancy 53
Exhibit 22	Difficulties Eating Healthfully During Pregnancy 54
Exhibit 23	Vitamin and Mineral Supplement Use 57
Exhibit 24	Prenatal Vitamin Use by Childbirth History, Use of Prenatal Care, and Prior WIC Participation 58
Exhibit 25	Cigarette Smoking Prior to and During Pregnancy 59
Exhibit 26	Cigarette Smoking Among Sample Members Compared to Data from the 1988 National Maternal and Infant Health Survey (NMIHS) 61
Exhibit 27	Alcohol Consumption Before and During Pregnancy 62
Exhibit 28	Reported Alcohol Consumption Among Sample Members Compared to Data from the 1988 National Maternal and Infant Health Survey (NMIHS) 63
Exhibit 29	Use of Over-the-counter Medications 65
Exhibit 30	Plans for Infant Feeding 66
Exhibit 31	Plans for Infant Feeding by Demographic Characteristics, Childbirth History, Prior WIC Participation, and Breastfeeding Experience 67
Exhibit 32	Breastfeeding Experience/Exposure 69
Exhibit 33	Plans for Infant Feeding: Reasons for Planning Formula-only Feeding 71
Exhibit B1	Beliefs About Advantages and Disadvantages of Breastfeeding and Bottle Feeding B-1
Exhibit B2	Relative Importance of Advantages and Disadvantages of Breastfeeding and Bottle Feeding B-7
Exhibit B3	Food Consumption Patterns by Prior WIC Participation B-12

ACKNOWLEDGEMENTS

The WIC Nutrition Education Assessment Study is indebted to the staff and participants of the six local WIC agencies who supported the study through all of its various phases. Without their cooperation, this study could not have been implemented. Thanks are also due to staff in the three State WIC offices who provided information on State policies and procedures as well as information on local agency caseloads, both of which were critical in identifying potential sites for the study.

The study was also assisted by Laura Sims, a consultant who played a key role in the start-up phase of the project, and a Technical Advisory Group comprised of Christine Olson, Yvonne Bronner, and Jane Peacock. These individuals made valuable contributions to the development of study instruments and will also review and critique the study's final report.

Staff of the Office of Analysis and Evaluation, Food and Nutrition Service, of the U.S. Department of Agriculture, have been responsible for oversight of the project. The Project Officer, Janet Tognetti Schiller, has overseen all stages of project planning and implementation and guided development of study reports. Jay Hirschman also made valuable contributions to study design and implementation. Staff from the WIC Division (J.P. Passino) and the Nutrition and Technical Services Division (Donna Blum) also reviewed and critiqued study plans and reports.

Finally, several staff members at Abt Associates have played or are currently playing important roles on the project. Mary Kay Fox is the current Project Director. Michael Puma was the Project Director for first two and one-half years of the project. Other key staff members included Mary Ann Hartnett (Survey Director), Karin Carter and Gary Donzelli (Assistant Survey Directors), Connie Hare and Lynne McKenzie (Field Managers), Nancy Burstein (Director of Analysis), Gus Baker, Amy Fowler, Stephanie Gluckman, Jenny Golay, Robert Kornfeld, and Cristopher Price (Analysts), and Leiming Lee and Don Laliberty (Programmers). Eileen Fahey and Tracy Olcott served as contract secretaries and, in this capacity, coordinated production of all study reports.

EXECUTIVE SUMMARY

This report presents baseline data from the WIC Nutrition Education Assessment Study. The study focuses on pregnant and postpartum WIC participants and has four key research objectives:

- to assess pregnant women's nutrition-related knowledge, attitudes, and self-reported behaviors at the time of WIC enrollment;
- to describe the processes used by local agencies in delivering WIC nutrition education and the type and amount of nutrition education actually received by pregnant and postpartum participants;
- to assess participants' satisfaction with WIC nutrition education services, materials, and staff; and
- to the extent possible, to evaluate the impact of WIC nutrition education on participants' knowledge, attitudes, and behaviors.

The WIC Nutrition Education Assessment Study was not designed to be a "best practices" study. Nor was it meant to provide a nationally-representative picture of nutrition education in the WIC program. Rather, the study examines processes and outcomes in six local WIC agencies that serve different populations and use a variety of different approaches to providing nutrition education.

This report describes findings related to the first of the four research objectives listed above. It summarizes data from baseline interviews completed with study participants between August 1994 and July 1995. Interviews were conducted in person and took place prior to WIC certification appointments, i.e., before subjects spoke with any WIC staff. Women were eligible to be recruited into the study if they were scheduled for a prenatal certification appointment and were not more than 32 weeks pregnant.

Although not generalizable to the entire WIC population, the findings presented in this report provide useful information on the characteristics of newly-enrolling pregnant women. Wherever feasible, data for the study population have been compared to appropriate reference data, e.g., data from the 1994 Study of WIC Participant and Program Characteristics, to provide the reader with some sense of how the study population compares to pregnant WIC participants nationwide.

Key findings are summarized below.

- With the exception of race, which was intentionally diverse across study sites, demographic characteristics of study participants and their households were fairly consistent from site to site and, for the sample as a whole, very similar to those reported for pregnant WIC participants nationwide.
- Timing of WIC enrollment (trimester of pregnancy) varied quite a bit across sites. However, the picture for the sample as a whole is consistent with WIC participants nationwide.
- Most study participants reported that, prior to WIC enrollment, they already knew more than a little about healthy eating during pregnancy. Leading sources of nutrition information were books, magazines, and newspapers.
- Newly enrolling pregnant women in these sites had a high level of nutrition knowledge. Women were most knowledgeable about healthy practices during pregnancy (eating habits, weight loss during pregnancy, use of cigarettes, and use of over-the-counter medications), and least knowledgeable about the specific nutrient content of foods and about recommended infant feeding practices.
- Women who participated in WIC during a previous pregnancy knew more about breastfeeding and about recommended infant feeding practices than women with no prior WIC experience (most of whom were first-time mothers).
- Women had positive attitudes about healthy eating during pregnancy. However, they expressed concerns about their ability to eat healthfully. On average, women were concerned about their ability to eat healthfully in three of eight potentially difficult situations. The two specific situations most often cited as potentially problematic were feeling stressed and having a lot of less-nutritious foods in the house.
- Research has shown that adoption of a desired health behavior may be influenced by the support (positive or negative) provided by important people in one's life, e.g., spouse, significant other, parents, siblings, or close friends. A small minority (10% or less) of women indicated that their efforts to eat well during pregnancy or to breastfeed might be compromised by the negative attitude of one or more of the people in their lives. Among women who smoked prior to pregnancy, one in four reported that someone in their life might make it difficult for them to cut down on or quit smoking during pregnancy.
- At the time of WIC enrollment, about 63 percent of women planned to breastfeed their babies. Of these, about 20 percent planned to breastfeed only and 43 percent planned to use formula in combination with breastfeeding.

- Factors that contributed to womens' decisions not to breastfeed were simple lack of interest in breastfeeding, the belief that breastfeeding takes more time than formula feeding, a need to return to work or school, and feeling embarrassed about or socially uncomfortable with breastfeeding.

I. OVERVIEW OF THE WIC NUTRITION EDUCATION ASSESSMENT STUDY

This report presents baseline data from the WIC Nutrition Education Assessment Study. The WIC Nutrition Education Assessment Study is being conducted by Abt Associates, Inc., under contract to the Food and Nutrition Service (FNS) of the United States Department of Agriculture (USDA). The study focuses on pregnant and postpartum WIC participants and was designed by FNS to fill several important gaps in information about the nutrition education component of the WIC program.

The study has four key research objectives:

- To assess pregnant women's nutrition-related knowledge, attitudes and self-reported behaviors at the time of WIC enrollment.
- To describe the processes used by local agencies in delivering WIC nutrition education and the type and amount of nutrition education actually received by participants.
- To assess participants' satisfaction with WIC nutrition education services, materials, and staff.
- To evaluate the impact of WIC nutrition education on participants' knowledge, attitudes, and behaviors.

The WIC Nutrition Education Assessment Study is not a "best practices" study. Nor is it meant to provide a nationally-representative picture of nutrition education in the WIC program. Rather, the study examines processes and outcomes in six local WIC agencies that serve different populations and use a variety of different approaches to providing nutrition education. The impact study encompassed in the study's fourth research objective is exploratory in nature.

This report describes findings related to the first of the four research objectives listed above. It summarizes data from baseline interviews completed with study participants between August 1994 and July 1995. Interviews were conducted in person and took place prior to WIC certification appointments, i.e., before subjects spoke with any WIC staff. Women were eligible to be recruited into the study if they were scheduled for a prenatal certification appointment and were not more than 32 weeks pregnant.

Although not generalizable to the entire WIC population, the findings presented in this report provide useful information on the characteristics of newly-enrolling pregnant women. Wherever feasible, data for the study population have been compared to appropriate reference data, e.g., data from the 1994 Study of WIC Participant and Program Characteristics, to provide

the reader with some sense of how the study population compares to pregnant WIC participants nationwide.

The remainder of this chapter describes site selection, sample recruitment, data collection components and schedule, and instrument development.

Selection of Study Sites

Six local WIC agencies participated in the study. Site selection was structured to include three sets of site pairs reflecting varying approaches to the delivery of WIC nutrition education. To control for State-level variation in nutrition education policies, as well as variations in WIC food packages, study sites were concentrated in three States (one pair of sites per State).

Site selection began with identification of three States, one in the Southwestern region, one in the Mountain Plains region, and one in the Midwest. The specific States selected used standardized food packages for pregnant women and had a number of local WIC agencies with enrollments large enough to support the sample size requirements of the study. The use of standardized food packages within a State minimized possible variation in the receipt of the major WIC benefit -- supplemental foods. This, in turn, strengthens the study's ability to detect the marginal effect of WIC nutrition education. If the food package provided to study participants is essentially constant from one local agency to the next within a State, while the type and amount of nutrition education received varies, the potential influence of the WIC food package on the outcomes of interest, particularly intake of WIC foods, is minimized.

Within each of the three selected States, numerous factors were considered in selecting two local agencies to participate in the study. Prime among these was the local agency's ability to satisfy sample size requirements. To be included in the study, a local agency had to be large enough to ensure that a minimum of 300-450 newly-enrolling pregnant women could be recruited into the study over a period of approximately seven months. While FNS' original criteria called for the higher end of this range, study requirements were adjusted to allow for somewhat smaller samples in two study sites. This accommodation was made to ensure that the study would not be limited to urban WIC Programs with very large caseloads.

In addition to monthly enrollment of pregnant women, characteristics of the nutrition education program figured prominently in decisions about site selection. Directors of local agencies that met sample size requirements were interviewed to gather information on procedures used in delivering nutrition education to pregnant and postpartum women. This information was used to create a profile of the nutrition education delivery system used in each local agency and to classify agencies, on the basis of their planned nutrition education program, as either lower-intensity or higher-intensity.

Because of a substantial amount of variation in nutrition education practices across States, intensity classifications were based on comparisons *within each State*. Higher-intensity sites generally met one or more of the following criteria: provided opportunities for more than the two nutrition education contacts mandated by current regulations; offered more individual (as opposed to group) contacts; and/or reported longer average contact time (minutes),

particularly for the second contact. Most sites designated as higher-intensity also reported a comprehensive breastfeeding promotion program.

Once designations of lower- and higher-intensity were assigned to each candidate local WIC agency within a State, two sites in each state were selected for the study. To ensure diversity in nutrition education programs, one higher-intensity site and one lower-intensity site were selected in each State.¹ Site selection was structured to ensure ethnic and cultural diversity across the sample, as well as variability in level of urbanicity. Characteristics of the six study sites selected for the study are summarized below:

Southeastern Region

- | | |
|--------|---|
| Site 1 | Large county health department in an urban area. Participant population is comprised largely of Hispanics and blacks, many of whom are recent immigrants. |
| Site 2 | Large county health department in a primarily suburban area. Participant population includes roughly equivalent proportions of blacks and whites. |

Mountain Plains Region

- | | |
|--------|---|
| Site 1 | Large multi-county health department in urban area. More than one-half of the participants are white; roughly equivalent proportions of the remainder are black and Hispanic. |
| Site 2 | Small city health department in rural area. More than one-half of the participants are Hispanic; most of the others are white. |

Midwest Region

- | | |
|--------|--|
| Site 1 | Large community health center in urban area. About two-thirds of the participants are white. |
| Site 2 | Small county health department in rural area. About 80 percent of participants are white. |

In all cases, Site 1 was considered to be lower-intensity at the time of site selection.

¹The original study design called for an impact analysis comparing outcomes in higher- and lower-intensity sites in each State. This analysis was ultimately abandoned, however, because anticipated differences between sites were not always borne out in actual practice. Consequently, in most cases, the contrast between the higher- and lower-intensity site in each State was not large enough to support an impact analysis.

Sample Recruitment

Newly-enrolling pregnant women were recruited into the study just prior to WIC certification.² In most cases, sample recruitment and baseline interviews were conducted in WIC delivery sites on the day women came in for certification appointments and before women met with any WIC staff. In Mountain Plains Site 1, however, where participants are certified via large group appointments, many potential sample members were initially missed because interviewers were not able to recruit and interview all of the women before the group session began. It proved more fruitful to recruit and interview women in their homes two to three days prior to their certification appointment. This procedure was also used, but to a lesser extent, in Southeastern Site 2.

Sample recruitment began in August 1994 and was completed in July 1995. The final baseline sample included 2,100 newly-certified pregnant WIC participants. Sample distribution across the six study sites is shown below:

Southeastern Region	
Site 1	400
Site 2	400
Mountain Plains Region	
Site 1	400
Site 2	300
Midwest Region	
Site 1	300
Site 2	300

The smaller samples for Mountain Plains Site 2 and Midwestern Site 2 reflect the fact that these are small, rural sites. The target sample size for Midwestern Site 1 was reduced from 400 to 300 because the rate of new enrollments was substantially lower than originally reported and the rate of failed certification appointments (no shows) was much higher than anticipated.

Data Collection Components and Schedule

As noted above, baseline interviews were conducted just before women were certified as prenatal WIC participants. Interviews were completed in-person and took place before women met with any WIC staff.

Sample members were reinterviewed at two other points in time. The first followup interview was completed when women were at approximately 32-36 weeks gestation. The second followup interview took place approximately 16-24 weeks postpartum, when infants born to study participants were between four and six months of age. Followup interviews were completed by telephone unless the respondent did not have a phone.

Both followup interviews included measures of knowledge, attitudes, and behavior identical to those used in the baseline survey. Respondents were also

²"Newly enrolling" refers to enrollment for the current pregnancy. Women may have participated in WIC during a previous pregnancy and/or as caretakers of infant or child WIC participants.

asked to report the number and type of nutrition education contacts received since enrollment; the topics covered in these nutrition education contacts; and their satisfaction with WIC nutrition education staff and services. The postpartum survey also included items that addressed infant feeding decisions made at birth and infant feeding practices between birth and four-to-six months of age.

Information about nutrition education contacts received by individual participants was also abstracted, to the extent possible, from participants' WIC records. Data abstractions were completed shortly after the final followup interviews were completed.

Finally, staff interviews and on-site observations of nutrition education sessions were conducted to augment the descriptive information on the delivery of nutrition education services that was obtained during site recruitment. All of these data are summarized in the study's final report.

Instrument Development

In developing survey items to measure knowledge, attitudes, and behaviors, a concerted effort was made to ensure that key theories of health behavior were considered and that, to the extent possible, existing measures, i.e., instruments used successfully in previous research, were incorporated or adapted.

A comprehensive review of the literature was conducted to identify studies, published in English between 1987 and Spring 1993, which focused on pregnant and/or postpartum women and their nutrition knowledge, attitudes, and/or behaviors (usual dietary intake, use of iron and prenatal vitamin supplements, and infant feeding decisions). In selecting papers or reports for review, emphasis was given to studies with experimental and quasi-experimental designs. Non-experimental research or reports were also reviewed if the instrumentation used was potentially useful.

Measures of nutrition knowledge. A total of seven different knowledge instruments were identified through the literature search. While all instruments reportedly had good reliability, none was suitable for use in the WIC Nutrition Education Assessment Study because they were too long; focused on only one aspect of nutrition knowledge, e.g., breastfeeding; or were tailored to detailed types of information imparted in specialized nutrition education interventions.

All available instruments were reviewed by FNS staff who then developed a series of 21 items designed to measure concepts or facts thought to be central to most WIC nutrition education efforts. The final battery of items included some that were taken verbatim from existing instruments, some that were adapted from existing items, and others that were developed by FNS staff. Four content areas were covered: general nutrition knowledge (nutrient content of foods, recommended eating patterns); healthy practices during pregnancy (diet, weight loss, alcohol, cigarettes, use of over-the-counter medications); breastfeeding; and recommended infant feeding practices.

Attitudes and perceptions. Thirteen of the instruments identified through the literature search measured attitudes toward healthy eating during pregnancy, attitudes toward breastfeeding, and/or related constructs. These instruments

were used to develop several different sets of survey questions. A battery of items used by Rosander and Sims (1981)³ was adopted, with minor modifications, to assess attitudes about the effect of diet on health and general attitudes about control over eating habits.

In addition, a series of items was included to specifically measure women's attitudes toward breastfeeding and formula feeding. The items were adapted from those used in three papers premised on the *theory of reasoned action*.⁴ The *theory of reasoned action* assumes that individuals consider the implications of their actions before they decide to engage in a behavior. Consequently, survey items assess both a woman's beliefs about the advantages and disadvantages of breastfeeding (behavioral beliefs) and the relative value she places on each belief (evaluation factors).

Items designed to measure participants' *self-efficacy* were also included. *Self-efficacy* is a key construct in the *social learning theory* of health behavior, which holds that behavior change is influenced by an individual's observation of other people in their environment. Self-efficacy is influenced by a woman's belief about the anticipated approval or support of significant others (husband, mother, other family members). Survey items measured the relative level of confidence women had in their ability to implement a particular behavior, as well as the extent to which significant others would support decisions to make behavior changes.

A published, but untested, set of items designed to measure self-efficacy with regard to healthy eating practices was adapted for use in this study.⁵ An item was also developed to assess participants' perceptions about whether anyone in their life might make it difficult for them to implement desired behavior changes or to breastfeed. The need to limit the length of the survey, in order to promote adequate response rates, precluded use of a separate measure of self-efficacy related to breastfeeding or more elaborate measures of social support.

Dietary intake. The measure of dietary intake used in this study was intended to assess usual patterns of food intake rather than to estimate total nutrient intake. A variety of different food frequency (checklist) instruments were examined, with an emphasis on those that were brief, simple to administer, and designed for use with pregnant and/or postpartum women. None of the

³Rosander, K. and Sims, L. (1981). Measuring effects of an affective-based nutrition education intervention. *Journal of Nutrition Education* 13(3): pp 102-105.

⁴Gielen A.C. et al. (1992). Determinants of breastfeeding in a rural WIC population. *Journal of Human Lactation* 8(1): 11-16; Manstead, A.S., C. Proffitt, and J.L. Smart (1983). Predicting and understanding mothers' infant feeding intentions and behaviors: Testing the theory of reasoned action. *J Pers Soc Psychol* 44: 657-671; and Matheny, RJ, MF Picciano, and L Birch (1987). Attitudinal and social influences on infant feeding preference. *Journal of Nutrition Education* 19(1): 21-31.

⁵IOX Assessment Associates (1988). *Program Evaluation Handbook: Nutrition Education*. Los Angeles, CA: IOX Assessment Associates (pp. 165-166).

instruments used in published research fit the needs of the study exactly; many were too lengthy for inclusion in the multi-faceted survey instrument. Ultimately, an abbreviated food frequency was developed, based on the instrument used by Rosander and Sims (1981).⁶ The food frequency measures usual consumption of WIC foods as well as a number of specific non-WIC foods (meats, poultry and fish; fried foods; fruits; vegetables (other than WIC foods such as dried beans and peas); sweetened beverages; sweets; and alcoholic beverages).

Use of cigarettes and alcohol. Survey items used in the National Maternal and Infant Health Survey (NMIHS) were adopted with minor modifications. To reduce the chances of socially-desirable responses, questions about smoking and alcohol use were imbedded in a series of questions that cover a broad range of topics.

⁶Rosander, K. and Sims, L. (1981). Measuring effects of an affective-based nutrition education intervention. *Journal of Nutrition Education* 13(3): pp 102-105.

II. SUMMARY OF BASELINE DATA

Presentation of baseline data is divided into four sections: Background Characteristics; Nutrition Knowledge; Attitudes and Related Constructs; and Behaviors. The specific types of data included in each section are outlined below:

Background Characteristics

- Demographics of sample members and their households;
- Pregnancy history and use of prenatal care;
- Prior WIC participation;

Nutrition Knowledge

- Perceived knowledge about nutrition during pregnancy;
- Sources of nutrition information;
- Baseline nutrition knowledge scores;

Attitudes and Related Constructs

- Baseline attitudes regarding healthy eating;
- Baseline measures of self-efficacy;
- Perceived support for positive health behaviors;
- Perceptions about current health status, eating habits, and weight gain;
- Behavioral beliefs and evaluation factors related to infant feeding decisions;

Behaviors

- Reported food consumption patterns;
- Influences on food consumption since pregnancy;
- Vitamin and mineral supplement use;
- Cigarette smoking and alcohol consumption;
- Use of over-the-counter medications; and
- Plans for infant feeding.

Tabular summaries present data for each of the six study sites as well as for the total population. Additional summaries, stratified by prior WIC participation, have been prepared for some variables. Whenever feasible, data for the study population has been compared to appropriate reference data, e.g., data from the 1994 Study of WIC Participant and Program Characteristics (1994 WIC-PC) or the 1988 National Maternal and Infant Health Survey (NMIHS). All exhibits are purely descriptive and are limited, for the most part, to distributions and means.

The accompanying text provides supporting explanations or descriptions and highlights interesting patterns or findings. The discussion does not focus on

differences between lower- and higher-intensity sites and no statistical tests have been performed on the data.

The reader is reminded that, while the findings discussed in this report provide useful information on characteristics of newly-enrolling pregnant women in a variety of WIC sites, results are not generalizable to the entire WIC population.

Background Characteristics

Demographic Characteristics of Sample Members and Their Households.

Exhibit 1 summarizes data on the demographic characteristics of sample members, including age, race, marital status, employment and education. Exhibit 2 presents data on household characteristics including household size and composition, participation in the AFDC and/or Food Stamp programs, income and poverty level. In general, sample characteristics are fairly comparable across study sites and, for the total sample, are similar to those reported for pregnant WIC participants nationwide (Exhibit 3).

Households in both Southeastern Site 1 and Mountain Plains Site 1 are less likely than households in the other four sites to participate in the AFDC and/or Food Stamp programs (Exhibit 2). Program staff in both sites attribute this pattern to substantial numbers of illegal immigrants, who cannot enroll in these programs, as well as legal immigrants who resist enrolling in these programs because of fears that this might compromise their "good status."

Women in Southeastern Site 1 are somewhat older, are less likely to be employed or in school, and have less education than women in the other five sites. Moreover, these women live in households that are slightly larger (due primarily to the presence of multiple adults) and have less reported income.

Pregnancy History and Use of Prenatal Care. Overall, 50 percent of the sample was comprised of first-time mothers -- women who had either never been pregnant or never had a live birth (Exhibit 4). The proportion of first-time mothers was lowest in Southeastern Site 1 (42 percent), where the women tended to be older, and highest in Mountain Plains Site 1 (57 percent).

The timing of WIC enrollment varied quite a bit across study sites. Relatively few respondents enrolled during the third trimester (9 - 15 percent). However, with the exception of Mountain Plains Site 2 and Midwestern Site 2, fewer than one-half of the women enrolled in WIC during the first trimester. First trimester enrollment was substantially lower in Southeastern Site 1 (26 percent) than in the other five sites (38 - 58 percent). Overall, the pattern of enrollment observed in study sites is similar to the pattern reported in the 1994 WIC-PC data (Exhibit 3).

With the exception of Midwestern Site 2, which had the highest percentage of women enrolling during the first trimester of pregnancy, the majority of sample members in all sites (73 - 96 percent) were enrolled in prenatal care at the time of WIC enrollment (Exhibit 5). Most of the women not enrolled in prenatal care at the time of the baseline interview were still in the first trimester of pregnancy. As was the case with the timing of WIC enrollment, women in Southeastern Site 1 began prenatal care later than women in the other sites. About 48 percent of these women began prenatal care during the

Exhibit 1

Demographic Characteristics

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
Age							
Under 15 years	0.0%	1.0%	1.0%	1.3%	0.3%	1.0%	0.8%
15-17 years	6.3	8.8	13.0	13.7	11.0	14.0	10.9
18-34 years	83.3	85.3	83.0	76.7	82.0	78.7	81.8
35 or more years	10.0	4.5	2.3	6.7	4.7	3.7	5.3
Not reported	0.5	0.5	0.8	1.7	2.0	2.7	1.2
Mean (years)	26.4	23.9	22.5	23.5	23.0	22.7	23.8
Race							
Black (non-Hispanic)	13.8%	41.3%	18.0%	1.3%	15.3%	14.7%	18.4%
Hispanic	73.0	1.3	20.3	53.3	13.3	0.0	27.5
White (non-Hispanic)	1.3	53.3	53.5	37.0	67.7	80.0	47.0
Other/not reported	12.0	4.3	8.3	8.3	3.7	5.3	7.1
Marital status							
Single, never married	56.0%	48.5%	50.8%	49.3%	57.3%	56.0%	52.8%
Married/living w/partner	32.8	37.3	37.8	39.0	30.7	32.3	35.1
Divorced	3.8	6.5	5.8	6.0	10.0	8.3	6.5
Legally separated	7.5	7.3	5.8	5.0	2.0	2.3	5.2
Widowed	0.0	0.5	0.0	0.7	0.0	1.0	0.3
Employment status							
Currently employed	21.8%	31.0%	31.3%	34.3%	27.3%	35.0%	29.8%
Not employed	78.3	69.0	68.8	65.7	72.7	65.0	70.2

Exhibit 1 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Hours worked per week</i>							
Not working	78.3%	69.0%	68.8%	65.7%	72.7%	65.0%	70.2%
< 20 hours	3.3	3.3	4.8	6.0	6.0	5.7	4.7
20-39 hours	9.0	16.1	17.3	16.6	14.0	19.3	15.2
40 or more hours	9.5	11.8	8.8	11.7	7.3	10.0	9.9
Mean (hours/week) ¹	30.7	30.6	29.8	28.7	27.7	30.7	29.8
<i>Education</i>							
Less than 8th grade	9.5%	0.8%	3.3%	2.3%	1.3%	2.3%	3.4%
Completed 8th grade	4.3	2.0	2.5	4.3	3.7	3.7	3.3
Some high school	34.8	24.8	36.8	28.0	32.3	34.0	31.8
Completed HS/GED	32.8	38.8	21.8	25.3	34.7	30.7	30.7
Some college or post-HS	9.3	24.5	18.5	27.7	21.7	19.7	19.8
Associates', vocational or technical degree	7.5	7.5	16.8	11.7	5.0	8.3	9.6
Bachelor's degree or higher	2.0	1.8	0.5	0.7	1.3	1.3	1.3
<i>Current schooling</i>							
In school	12.3%	23.3%	19.8%	19.7%	23.3%	22.3%	19.9%
Not in school	87.8	76.8	80.3	80.3	76.7	77.7	80.1

¹ Means based on sample members reporting employment.

Exhibit 2

Household Characteristics

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Number of children in household</i>							
None	30.8%	35.8%	40.0%	34.0%	33.0%	39.0%	35.4%
1 child	35.8	32.5	29.3	33.0	33.7	34.0	33.0
2-3 children	27.3	25.5	27.5	27.7	29.0	23.0	26.7
4 or more children	6.3	6.3	3.3	5.3	4.3	4.0	5.0
Mean (children)	1.2	1.2	1.1	1.2	1.2	1.0	1.2
<i>Number of other adults in household</i>							
None	10.8%	19.0%	15.0%	16.0%	20.0%	17.7%	16.2%
1 other adult	42.5	58.0	45.5	57.0	53.0	53.7	51.2
2-3 other adults	41.0	21.8	34.0	25.3	24.3	26.0	29.2
4 or more other adults	5.8	1.3	5.5	1.7	2.7	2.7	3.4
Mean (other adults)	1.6	1.8	1.5	1.2	1.5	1.2	1.5
<i>Total household size</i>							
1 person	2.3%	5.5%	5.0%	4.7%	7.0%	7.3%	5.1%
2 persons	16.3	28.0	27.3	26.7	22.7	25.3	24.3
3 persons	27.3	29.8	24.8	27.7	30.3	33.3	28.6
4 persons	26.8	19.0	20.3	20.7	21.3	18.3	21.2
5 persons	14.0	8.5	9.8	7.3	9.0	8.0	9.6
6 or more persons	13.5	9.3	13.0	13.0	9.7	7.7	11.1
Mean (persons)	3.9	3.3	3.5	3.4	3.4	3.2	3.5
<i>Household receipt of AFDC and Food Stamp benefits</i>							
AFDC and Food Stamps	15.5%	23.0%	12.5%	22.3%	30.3%	19.3%	20.0%
AFDC only	2.0	4.5	2.5	2.0	4.3	8.7	3.9
Food Stamps only	14.3	21.3	13.0	16.3	15.7	17.0	16.2
Neither AFDC nor Food Stamps	67.8	51.0	70.8	59.0	49.3	54.3	59.3
Not reported	0.5	0.3	1.3	0.3	0.3	0.7	0.6

Exhibit 2 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	
<i>Household income (\$ per month)</i>							
Less than \$250	19.8%	8.8%	7.3%	9.0%	9.7%	5.3%	10.2%
\$251 - \$500	25.0	15.8	14.3	24.3	19.0	14.3	18.7
\$501 - \$750	20.8	15.0	10.5	16.0	15.3	18.3	15.9
\$751 - \$1,000	20.0	19.0	14.5	23.0	17.0	13.3	17.8
\$1,001 - \$1,250	7.8	10.8	8.8	10.7	8.7	8.3	9.1
\$1,251 - \$1,600	3.5	12.3	12.0	7.7	6.3	10.7	8.8
\$1,601 - \$2,500	1.0	7.0	8.3	7.7	10.3	8.7	6.9
Over \$2,500	0.3	1.8	5.0	1.0	2.0	3.3	2.2
Not reported	2.0	9.8	19.5	0.7	11.7	17.7	10.2
<i>Distribution of percent of poverty level¹</i>							
0 - 50	57.0%	29.0%	23.5%	39.7%	33.3%	23.0%	34.6%
51 - 100	31.5	27.0	23.3	32.3	27.3	25.0	27.7
101 - 130	6.0	13.3	11.0	13.0	10.7	12.7	11.0
131 - 150	1.3	10.0	8.0	6.3	7.0	10.0	7.0
151 - 185	1.3	5.8	6.8	4.7	4.7	4.3	4.6
Over 185	0.8	5.3	7.5	3.3	5.3	7.3	4.9
Not reported	2.3	9.8	20.0	0.7	11.7	17.7	10.4

¹ Poverty level calculations are based on income, income period, and household size.

Exhibit 3

Characteristics of Sample Members In Comparison to Data from 1994 Census of WIC Participants

	Total Sample	Pregnant WIC Participants in 1994¹
	(n = 2100)	(n = 823, 604)
Age		
Under 15 years	0.8%	1.0%
15-17 years	10.9	11.2
18-34 years	81.8	81.7
35 or more years	5.3	5.0
Not reported	1.2	1.0
Race		
American Indian or Alaskan Native	0.0%	1.5%
Asian or Pacific Islander	1.0	2.6
Black (non-Hispanic)	18.4	23.9
Hispanic	27.5	27.7
White (non-Hispanic)	47.0	43.8
Other/not reported	6.2	0.6
Household receipt of AFDC and Food Stamp benefits		
AFDC and Food Stamps	20.0%	24.1%
AFDC only	3.9	3.0
Food Stamps only	16.2	12.7
Neither AFDC nor Food Stamps	59.3	52.3
Not reported	0.6	7.8

¹ Source: Randall, B., L. Boast, and L. Holst (1995), Study of WIC Participant and Program Characteristics: 1994. Washington, DC: U.S. Department of Agriculture.

Exhibit 3 (continued)

	Total Sample	Pregnant WIC Participants in 1994¹
	(n = 2100)	(n = 823, 604)
<i>Total household size</i>		
1 person	5.1%	17.8%
2 persons	24.3	26.5
3 persons	28.6	25.0
4 persons	21.2	15.1
5 persons	9.6	7.7
6 or more persons	11.1	6.9
Not reported	0.0	0.7
Mean (persons)	3.5	3.0
<i>Distribution of percent of poverty level</i>		
0 - 50	34.6%	31.2%
51 - 100	27.7	27.8
101 - 130	11.0	11.0
131 - 150	7.0	5.5
151 - 185	4.6	5.8
Over 185	4.9	1.0
Not reported	10.4	17.7
<i>Annualized household income</i>		
Mean	\$10,523	\$9,017
Median	\$9,317	\$7,800
Not reported	10.4%	17.7%
<i>Trimester of pregnancy at time of certification</i>		
First trimester	42.1%	38.9%
Second trimester	46.4	40.1
Third trimester	11.4	10.7
Not reported	0.1	10.3

¹ Source: Randall, B., L. Boast, and L. Holst (1995), Study of WIC Participant and Program Characteristics: 1994. Washington, DC: U.S. Department of Agriculture.

Exhibit 4

Pregnancy and Childbirth History

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Number of previous pregnancies</i>							
None	35.3%	41.3%	45.8%	39.3%	42.3%	50.0%	42.1%
One or more	64.8	58.8	54.3	60.7	57.7	50.0	57.9
<i>Number of live births</i>							
No prior pregnancies	35.3%	41.3%	45.8%	39.3%	42.3%	50.0%	42.1%
0 live births	6.3	8.3	11.0	9.7	6.0	5.7	7.9
1 live birth	29.0	27.8	24.0	26.7	27.0	27.7	27.0
2 live births	18.3	13.0	13.5	13.7	16.0	10.7	14.3
3 live births	6.0	6.3	4.3	7.3	4.7	3.7	5.4
4 or more live births	5.3	3.5	1.5	3.3	4.0	2.3	3.3
Mean (live births) ¹	1.7	1.5	1.3	1.5	1.6	1.4	1.5
<i>Trimester of pregnancy at time of certification²</i>							
First trimester	26.0%	37.5%	40.0%	50.7%	47.7%	58.0%	42.1%
Second trimester	63.5	50.0	45.5	38.0	42.3	32.7	46.4
Third trimester	10.0	12.5	14.5	11.3	10.0	9.3	11.4
Missing ³	0.5	0.0	0.0	0.0	0.0	0.0	0.1

¹ Means based on sample members with one or more prior pregnancies.

² Date of baseline interview used when date of certification is not available. (Respondents in some sites were interviewed prior to their certification appointments.)

³ Trimester cannot be calculated because of missing or erroneous certification and interview dates.

Exhibit 5

Use of Prenatal Care

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Have had at least one prenatal visit for this pregnancy</i>							
Yes	95.8%	88.5%	73.8%	79.3%	73.3%	56.7%	79.0%
No	4.3	11.5	26.3	20.7	26.7	43.3	21.0
<i>Number of prenatal visits at time of baseline interview</i>							
0 visits	4.3%	11.5%	26.3%	20.7%	26.7%	43.3%	21.0%
1 visit	66.3	24.3	23.0	30.3	28.0	19.3	32.7
2-3 visits	15.5	30.8	26.0	26.0	24.0	15.0	23.0
4-5 visits	9.5	20.5	12.3	13.0	12.3	13.0	13.5
6-9 visits	3.0	8.5	9.0	7.7	5.7	6.7	6.8
10 or more visits	1.3	4.3	3.3	2.9	3.3	2.7	2.9
Mean (visits)	1.9	3.4	3.3	2.9	3.1	3.6	2.9
<i>Trimester of pregnancy at first prenatal visit¹</i>							
	(n = 383)	(n = 354)	(n = 295)	(n = 238)	(n = 220)	(n = 170)	(n = 1660)
First trimester	48.3%	81.1%	80.3%	81.9%	81.4%	84.7%	73.9%
Second trimester	47.8	17.5	18.3	16.8	18.2	14.7	24.3
Third trimester	3.4	1.4	0.7	1.3	0.5	0.6	1.5
Missing ²	0.5	0.0	0.7	0.0	0.0	0.0	0.2
<i>Current trimester of pregnancy for those not in prenatal care³</i>							
	(n = 17)	(n = 46)	(n = 105)	(n = 62)	(n = 80)	(n = 130)	(n = 440)
First trimester	29.4%	65.2%	64.8%	71.0%	70.0%	85.4%	71.4%
Second trimester	64.7	30.4	32.4	25.8	28.8	13.1	26.1
Third trimester	0.0	4.4	2.9	3.2	1.3	1.5	2.3
Missing ²	5.9	0.0	0.0	0.0	0.0	0.0	0.2

¹ Percentages based on sample members reporting at least one prenatal visit for this pregnancy.

² Trimester can not be calculated because of missing or erroneous interview and certification dates or missing information on date of first prenatal visit.

³ Percentages based on sample members who reported they had not received any prenatal care for this pregnancy.

first trimester, compared to 80 percent or more of women in the other five sites.

Prior WIC Participation. In each of the six sites, the majority of women had never participated in WIC before (Exhibit 6). This is not surprising given that about one-half of all sample members were first-time mothers. Across all study sites, slightly more than one-third (38 percent) of the newly-enrolling pregnant women had participated in WIC during one or more previous pregnancies. Fewer than one in five women (17 percent) had a child (or children) currently enrolled in WIC.

The data were examined to see if women with prior WIC participation differ from those who had not previously participated in WIC. Results are displayed in Exhibits 7 and 8 (statistical significance of differences between the two groups was not tested). Women with prior WIC experience are older than women without prior WIC experience. They are also *more likely* to have one or more children, *less likely* to be enrolled in school, *more likely* to be currently or previously married, and *more likely* to be on welfare (called AFDC at the time data were collected) and/or enrolled in the Food Stamp program.

Women with prior WIC experience did not consistently enroll in either WIC or prenatal care earlier than women with no prior WIC experience (Exhibit 8). A modest trend in this direction was apparent in both Southeastern sites and in Mountain Plains Site 1. With regard to use of prenatal care, Southeastern Site 1 was noticeably different than the other five sites. In this site, 57 percent of women with prior WIC participation received prenatal care for the current pregnancy during the first trimester, compared to 44 percent of women with no prior WIC experience. A potential explanation for this finding is that women with prior WIC experience were less likely to be recent immigrants and therefore more likely to be hooked into local services and programs. Without specific information on immigration status, however, this hypothesis could not be tested.

Nutrition Knowledge

Perceived knowledge about nutrition during pregnancy. Women were asked to indicate how much they already knew about healthy eating during pregnancy prior to WIC enrollment, i.e., "We would like to know how much you feel you already know about healthy eating habits for pregnancy. Would you say you know almost nothing, a little, some, or a lot about healthy eating during pregnancy?"

Most women reported that they already knew either some or a lot about recommended eating practices during pregnancy (Exhibit 9). Women in Southeastern Site 1 reported the lowest levels of pre-existing knowledge and women in Southeastern Site 2 reported the highest.

Sources of nutrition information. Across all sites, leading sources of nutrition information were books, mentioned by 58 percent of respondents, and magazines and newspapers, cited by 50 percent of all respondents. Physicians were cited as a source of nutrition information by 38 percent of respondents, and nurses and/or midwives were mentioned by 26 percent. Less than 2 percent of sample members mentioned the WIC program as a source of

Exhibit 6

Prior and Current WIC Participation of Sample Members and Their Children

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Number of times woman previously participated in WIC</i>							
None	64.8%	60.5%	69.5%	52.3%	60.0%	63.0%	62.0%
One	25.3	26.5	22.8	29.0	23.7	27.2	25.5
More than one	10.0	13.0	7.8	18.7	16.3	9.9	12.2
<i>Children in household currently participating in WIC</i>							
Yes	15.0%	16.5%	6.0%	24.3%	28.3%	18.7%	17.3%
No	37.8	30.5	32.5	25.0	20.0	23.7	29.0
No children ¹	47.3	53.0	61.3	50.7	51.7	57.7	53.6
<i>Number of children currently participating in WIC</i>							
None	85.0%	83.5%	94.0%	75.7%	71.7%	81.3%	82.7%
One child	12.3	12.0	4.8	18.7	21.3	15.3	13.4
Two or three children	2.8	4.5	1.3	5.7	7.0	3.3	3.9
Mean (children) ²	1.2	1.3	1.3	1.3	1.3	1.2	1.2

¹ Includes respondents with no children as well as respondents who are not currently living with their children.

² Means based on sample members with one or more children currently participating in WIC.

Exhibit 7

Demographic Characteristics by Prior WIC Participation

	Southeast				Mountain Plains				Midwest				All Study Sites	
	Site 1		Site 2		Site 1		Site 2		Site 1		Site 2		All Study Sites	
	Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation	
	No (n = 259)	Yes (n = 141)	No (n = 242)	Yes (n = 158)	No (n = 278)	Yes (n = 122)	No (n = 157)	Yes (n = 143)	No (n = 180)	Yes (n = 120)	No (n = 185)	Yes (n = 109)	No (n = 1301)	Yes (n = 793)
Age														
Under 15 years	0.0%	0.0%	1.7%	0.0%	1.1%	0.8%	2.5%	0.0%	0.6%	0.0%	1.1%	0.0%	1.1%	0.1%
15-17 years	8.5	2.1	13.6	1.3	18.0	1.6	24.8	1.4	17.2	1.7	20.5	2.8	16.4	1.8
18-34 years	79.5	90.1	80.6	92.4	77.3	95.9	66.2	88.1	74.4	93.3	74.6	87.2	76.2	91.2
35 or more years	11.2	7.8	3.7	5.7	2.5	1.6	4.5	9.1	5.6	3.3	2.7	5.5	5.1	5.7
Not reported	0.8	0.0	0.4	0.6	1.1	0.0	1.9	1.4	2.2	1.7	1.1	4.6	1.2	1.3
Mean (years)	26.1	26.9	22.5	26.0	21.7	24.5	21.5	25.7	21.6	25.0	21.4	25.0	22.6	25.6
Currently enrolled in school														
Yes	15.4%	6.4%	32.6%	8.9%	25.5%	6.6%	29.9%	8.4%	28.9%	15.0%	28.1%	11.9%	26.2%	9.3%
No	84.6	93.6	67.4	91.1	74.5	93.4	70.1	91.6	71.1	85.0	71.9	88.1	73.8	90.7
Marital status														
Single, never married	59.8%	48.9%	61.6%	28.5%	56.5%	37.7%	63.7%	33.6%	67.2%	42.5%	68.1%	35.8%	62.1%	37.6%
Married live w/partner	28.2	41.1	29.8	48.7	36.0	41.8	28.7	50.3	23.9	40.8	23.8	46.8	29.0	45.1
Divorced	3.9	3.5	5.0	8.9	3.2	11.5	3.8	8.4	6.7	15.0	5.9	12.8	4.6	9.7
Legally separated	8.1	6.4	3.3	13.3	4.3	9.0	3.8	6.3	2.2	1.7	1.6	3.7	4.2	7.1
Widowed	0.0	0.0	0.4	0.6	0.0	0.0	0.0	1.4	0.0	0.0	0.5	0.9	0.2	0.5
Household size														
Mean (persons)	3.7	4.1	3.1	3.6	3.5	3.7	3.3	3.6	3.3	3.6	3.0	3.6	3.3	3.7

Exhibit 7 (continued)

	Southeast				Mountain Plains				Midwest				All Study Sites	
	Site 1		Site 2		Site 1		Site 2		Site 1		Site 2			
	Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
	(n = 259)	(n = 141)	(n = 242)	(n = 158)	(n = 278)	(n = 122)	(n = 157)	(n = 143)	(n = 180)	(n = 120)	(n = 185)	(n = 109)	(n = 1301)	(n = 793)
<i>Household receipt of AFDC and Food Stamp benefits</i>														
AFDC and Food Stamps	8.2%	29.1%	16.6%	32.9%	5.9%	27.9%	10.3%	35.7%	21.2%	44.2%	14.2%	28.4%	12.2%	33.0%
AFDC only	0.8	4.3	3.3	6.3	2.6	2.5	3.8	0.0	3.9	5.0	7.7	11.0	3.4	4.7
Food Stamps only	12.1	18.4	20.3	22.8	12.8	13.9	13.5	19.6	15.1	16.7	16.4	19.3	15.0	18.7
Neither AFDC nor Food Stamps	79.0	48.2	59.8	38.0	78.8	55.7	72.4	44.8	59.8	34.2	61.7	41.3	69.4	43.6
<i>Annualized household income (\$)</i>														
Mean	7056	7482	11278	10799	13658	11261	9594	10434	11184	10315	12432	12086	10695	10265
Median	7506	7506	10506	10506	10506	10506	7506	10506	10506	7506	10506	10506	10506	7506

Exhibit 8

Pregnancy History and Current Use of Prenatal Care by Prior WIC Participation

	Southeast				Mountain Plains				Midwest				All Study Sites	
	Site 1		Site 2		Site 1		Site 2		Site 1		Site 2		All Study Sites	
	Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation	
	No (n = 259)	Yes (n = 141)	No (n = 242)	Yes (n = 158)	No (n = 278)	Yes (n = 122)	No (n = 157)	Yes (n = 143)	No (n = 180)	Yes (n = 120)	No (n = 185)	Yes (n = 109)	No (n = 1301)	Yes (n = 793)
Number of previous pregnancies														
None	53.3%	2.1%	68.2%	0.0%	64.4%	3.3%	74.5%	0.7%	70.0%	0.8%	77.8%	0.0%	66.8%	1.1%
One or more	46.7	97.9	31.8	100.0	35.6	96.7	25.5	99.3	30.0	99.2	22.2	100.0	33.2	98.9
Number of live births														
None	62.2%	3.5%	81.0%	1.3%	78.4%	7.4%	88.5%	5.6%	78.3%	3.3%	83.8%	5.5%	77.6%	4.3%
One or more	37.8	96.5	19.0	98.7	21.6	92.6	11.5	94.4	21.7	96.7	16.2	94.5	22.4	95.7
Trimester of pregnancy at time of certification¹														
First trimester	24.3%	29.1%	36.0%	39.9%	40.3%	39.3%	55.4%	45.5%	46.7%	49.2%	57.8%	58.7%	41.5%	42.9%
Second trimester	65.6	59.6	51.7	47.5	44.2	48.4	36.3	39.9	41.7	43.3	31.4	33.9	46.7	45.9
Third trimester	9.3	11.4	12.4	12.7	15.5	12.3	8.3	14.7	11.7	7.5	10.8	7.3	11.6	11.2
Missing ²	0.8	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Have had at least one prenatal visit for this pregnancy														
Yes	95.8%	95.7%	85.5%	93.0%	74.5%	72.1%	76.4%	82.5%	73.9%	72.5%	60.0%	50.5%	78.9%	79.4%
No	4.2	4.3	14.5	7.0	25.5	27.9	23.6	17.5	26.1	27.5	40.0	49.5	21.1	20.6
Trimester of pregnancy at first prenatal visit³														
	(n = 248)	(n = 135)	(n = 207)	(n = 147)	(n = 207)	(n = 88)	(n = 120)	(n = 118)	(n = 133)	(n = 87)	(n = 111)	(n = 55)	(n = 1026)	(n = 630)
First trimester	43.6%	57.0%	81.6%	80.3%	79.2%	83.0%	81.7%	82.2%	83.5%	78.2%	85.6%	83.6%	72.6%	76.0%
Second trimester	52.0	40.0	16.4	19.1	18.8	17.1	17.5	16.1	15.8	21.8	13.5	16.4	25.2	22.9
Third trimester	3.6	3.0	1.9	0.7	1.0	0.0	0.8	1.7	0.8	0.0	0.9	0.0	1.8	1.1
Missing ⁴	0.8	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0

¹ Date of baseline interview used when date of certification not available. (Respondents in some sites were interviewed prior to their certification appointments.)

² Trimester cannot be calculated because of missing or erroneous interview and certification date.

³ Percentages based on sample members reporting at least one prenatal visit for this pregnancy.

⁴ Trimester cannot be calculated because of missing date of first prenatal visit.

Exhibit 9

Knowledge About Healthy Eating During Pregnancy

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Women's self-report regarding amount already known about healthy eating during pregnancy</i>							
Almost nothing	17.5%	4.5%	5.8%	5.0%	3.7%	3.0%	7.0%
A little	49.5	18.5	21.3	25.7	22.3	24.0	27.3
Some	24.5	42.8	46.3	44.3	45.7	49.7	41.6
A lot	7.8	34.3	26.8	25.0	28.3	23.3	24.0
<i>Sources of nutrition information</i>							
Book(s)	38.5%	68.8%	59.8%	66.7%	64.7%	50.3%	57.8%
Magazine/newspaper	34.8	64.3	45.3	56.7	59.3	41.7	50.0
Doctor	27.3	44.5	44.5	39.3	40.0	31.0	37.9
School/class/lecture	37.3	44.8	27.5	28.0	30.7	21.3	32.3
TV/video	32.5	36.3	30.0	32.3	27.7	22.0	30.5
Nurse/midwife	23.5	35.3	32.8	24.7	19.3	16.0	26.0
Family/friends	3.8	14.3	20.5	18.3	20.0	15.3	15.0
Health clinic/hospital	31.8	36.5	23.3	20.3	13.7	6.7	23.2
WIC Program	2.5	0.3	0.8	1.3	4.7	0.3	1.6
Other	24.8	30.3	25.5	33.0	29.7	20.7	27.2

nutrition information. There were few fluctuations in the relative rank of various nutrition information sources across sites. Women in Southeastern Site 1, however, cited family and friends as sources of nutrition information far less frequently than women in the other sites (4 percent versus 14 - 21 percent).

Baseline nutrition knowledge scores. The baseline interview included 21 items designed to assess nutrition knowledge. As noted in Part I of this report, survey items were specified by FNS staff and were designed to measure concepts or facts thought to be central to WIC nutrition education efforts. The 21 items were divided into four categories: general nutrition knowledge (6 items), healthy practices during pregnancy (5 items), breastfeeding (5 items), and recommended infant feeding practices (5 items). In the survey instrument, items were interspersed rather than grouped together by topic area.

During analysis, two of the knowledge items were dropped because the evidence suggested that they did not perform well. Respondents who scored well on the remainder of the knowledge items were more likely to answer these items incorrectly.⁷ Problems with these items may have been due to inconsistent advice provided by local health care providers or, in the case of the item related to a special diet for breastfeeding mothers, to poor wording.

Exhibits 10 and 11 present data on baseline nutrition knowledge of sample members. Exhibit 10 shows the percentage of women who answered each item correctly. Exhibit 11 shows mean, minimum and maximum scores for each topic area as well as for overall nutrition knowledge. The scores are percentages, reflecting the percentage of items answered correctly. Results were fairly consistent across sites, with the exception of Southeastern Site 1. Sample members in Southeastern Site 1 were less knowledgeable than women in the other sites in all topic areas except breastfeeding.

Newly-enrolling pregnant women in study sites were least knowledgeable, on average, about general nutrition facts. The survey items in this category that were missed most frequently included those related to food sources of vitamin C, iron, and folic acid. Women were generally aware of food sources for calcium. In each site, at least eight out of ten women answered this item correctly.

Overall, women in the study sample had a high level of knowledge about healthy practices during pregnancy. This is consistent with their self-reports, as described above. The specific item in this area that was most often answered incorrectly (including don't know responses) was the item related to attempted weight loss (for purposes of weight management) during pregnancy.

With regard to recommended infant feeding practices, women most often missed the items related to use of low-fat milk and the practice of feeding solid foods to help babies sleep through the night.

⁷Excluded items include: "It is not safe to drink even one alcoholic drink while pregnant" (a healthy practices during pregnancy item) and "Breastfeeding mothers have to follow a special diet" (a breastfeeding item).

Exhibit 10

Baseline Nutrition Knowledge Measures: Answers to Individual Items by Topic Area

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)

General Nutrition Knowledge

What you eat has nothing to do with whether you have anemia or low iron.

True	41.0%	10.8%	11.3%	13.7%	15.3%	9.3%	17.5%
False*	47.5	83.3	84.0	77.7	79.0	88.0	75.9
Don't know	11.5	6.0	4.8	8.7	5.7	2.7	6.7

Bread is a good source of vitamin C.

True	35.0%	23.5%	25.0%	22.7%	35.3%	22.7%	27.4%
False*	47.5	53.3	60.5	50.3	49.0	59.7	53.4
Don't know	17.5	23.3	14.5	27.0	15.7	17.7	19.1

Eating many small meals each day is better for your health than eating just one or two large meals.

True*	56.8%	77.8%	81.8%	74.0%	73.0%	74.3%	72.8%
False	38.0	15.5	16.0	15.0	23.0	18.0	21.2
Don't know	5.3	6.8	2.3	11.0	4.0	7.7	6.0

Choose the food that is best source of iron^a.

Correct answer	39.8%	28.3%	32.3%	31.7%	33.0%	31.3%	32.8%
Incorrect answer	53.3	61.0	61.5	56.7	57.0	55.7	57.7
Don't know	7.0	10.8	6.3	11.7	10.0	13.0	9.5

Choose the food that is best source of calcium^b.

Correct answer	81.8%	86.8%	89.3%	88.3%	88.7%	91.7%	87.5%
Incorrect answer	12.3	9.3	8.8	6.3	9.3	6.7	9.0
Don't know	6.0	4.0	2.0	5.3	2.0	1.7	3.6

Choose the food that is best source of folic acid^c.

Correct answer	23.3%	24.3%	23.3%	17.3%	20.0%	15.3%	21.0%
Incorrect answer	45.8	54.5	58.8	58.0	62.0	62.7	56.4
Don't know	31.0	21.3	18.0	24.7	18.0	22.0	22.6

Healthy Practices During Pregnancy

The food a woman eats during pregnancy can affect how healthy her new baby will be.

True*	67.0%	96.3%	96.0%	92.3%	95.0%	97.0%	90.0%
False	30.5	3.0	3.3	5.7	4.0	2.3	8.7
Don't know	2.5	0.8	0.8	2.0	1.0	0.7	1.3

Exhibit 10 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)

Healthy Practices During Pregnancy (continued)

It is OK for a pregnant woman to take medicine without talking to a doctor as long as it is not a prescription drug.

True	19.3%	4.0%	4.5%	2.0%	3.0%	2.3%	6.3%
False*	79.8	95.3	95.0	96.7	97.0	97.7	93.0
Don't know	1.0	0.8	0.5	1.3	0.0	0.0	0.6

If a woman is overweight, she should try to lose weight during pregnancy.

True	42.0%	11.8%	8.0%	3.0%	8.3%	8.3%	14.6%
False*	52.8	82.0	88.8	88.3	85.7	87.0	79.9
Don't know	5.3	6.3	3.3	8.7	6.0	4.7	5.6

A mother who smokes only a few cigarettes a day throughout her pregnancy may harm her developing baby.

True*	83.3%	94.0%	94.5%	95.7%	97.0%	97.0%	93.1%
False	15.0	4.5	4.5	2.7	1.7	2.0	5.5
Don't know	1.8	1.5	1.0	1.7	1.3	1.0	1.4

Breastfeeding

You should follow a strict schedule for feeding the baby when breastfeeding.

True	78.8%	59.8%	68.5%	58.3%	55.0%	66.3%	65.1%
False*	15.5	26.5	26.8	29.0	35.0	23.3	25.6
Don't know	5.8	13.8	4.8	12.7	10.0	10.3	9.3

Alcohol, caffeine, and nicotine can pass from your blood into your breast milk and affect your baby.

True*	87.0%	96.3%	95.8%	97.3%	97.0%	98.3%	95.0%
False	10.0	1.8	2.0	0.0	1.0	0.7	2.9
Don't know	3.0	2.0	2.3	2.7	2.0	1.0	2.2

Breastfeeding for even one week is better for your baby than not breastfeeding at all.

True*	81.0%	68.3%	75.8%	67.0%	76.0%	70.0%	73.3%
False	16.8	14.5	15.8	13.3	14.3	16.0	15.2
Don't know	2.3	17.3	8.5	19.7	9.7	14.0	11.5

Breast milk can help protect babies from certain illnesses.

True*	82.5%	86.5%	81.5%	83.0%	81.7%	85.3%	83.4%
False	14.0	5.0	10.8	6.0	11.0	8.7	9.3
Don't know	3.5	8.5	7.8	11.0	7.3	6.0	7.2

Exhibit 10 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
Infant Feeding Practices							
<i>It is OK for babies to drink regular or low-fat milk after the age of six months.</i>							
True	50.5%	21.5%	27.3%	20.7%	24.0%	27.3%	29.2%
False*	38.0	59.8	61.5	60.7	63.7	59.7	56.6
Don't know	11.5	18.8	11.3	18.7	12.3	13.0	14.2
<i>It is OK for babies to begin to eat solid foods, including cereal, at two months of age. This would include cereal in a bottle.</i>							
True	42.8%	19.3%	24.3%	17.7%	31.0%	24.0%	26.8%
False*	49.0	73.3	70.0	70.3	61.3	70.0	65.4
Don't know	8.3	7.5	5.8	12.0	7.7	6.0	7.8
<i>It is OK to lay a baby down with a bottle as long as the bottle has milk or formula in it and not juice or soda.</i>							
True	24.5%	11.0%	23.0%	13.3%	13.0%	13.3%	16.8%
False*	70.5	84.3	72.8	78.3	82.3	82.3	78.0
Don't know	5.0	4.8	4.3	8.3	4.7	4.3	5.1
<i>Giving a baby solid food helps him/her sleep through the night.</i>							
True	38.0%	22.8%	22.0%	18.0%	32.3%	25.3%	26.6%
False*	48.8	60.8	67.0	56.7	59.7	62.7	59.2
Don't know	13.3	16.5	11.0	25.3	8.0	12.0	14.2
<i>A baby should eat many different types of food as soon as possible.</i>							
True	42.3%	19.0%	17.8%	14.7%	20.7%	20.7%	23.0%
False*	50.8	69.0	77.0	74.7	72.7	70.3	68.6
Don't know	7.0	12.0	5.3	10.7	6.7	9.0	8.4

* = Correct answer

¹96 percent of women in this site had no reported use of cigarettes during the three months prior to pregnancy.

^aChoices presented: broccoli, orange juice, pinto beans*, cheese

^bChoices presented: tomatoes, milk*, chicken, whole wheat bread

^cChoices presented: spinach*, milk*, chicken, grapefruit juice

Exhibit 11

Baseline Nutrition Knowledge Measures: Mean Scores and Ranges by Topic Area¹

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
General nutrition knowledge (6 items)							
Mean	49.4%	58.9%	61.8%	56.6%	57.1%	60.1%	57.2%
Range:							
Minimum score	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum score	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Healthy practices during pregnancy (4 items)							
Mean	70.7%	91.9%	93.6%	93.3%	93.7%	94.7%	89.0%
Range:							
Minimum score	0.0	25.0	0.0	25.0	25.0	25.0	0.0
Maximum score	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Breastfeeding (4 items)							
Mean	66.5%	69.9%	69.4%	69.1%	72.4%	69.3%	69.3%
Range:							
Minimum score	0.0	25.0	0.0	0.0	25.0	25.0	0.0
Maximum score	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Recommended infant feeding practices (5 items)							
Mean	51.4%	69.4%	69.7%	68.1%	67.9%	69.0%	65.6%
Range:							
Minimum score	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum score	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Overall knowledge score (19 items)							
Mean	58.0%	70.8%	72.3%	70.0%	70.9%	71.6%	68.7%
Range:							
Minimum score	15.8	21.1	10.5	15.8	26.3	31.6	10.5
Maximum score	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Scores represent mean percent of items answered correctly within each topic area and across all topic areas (overall score). Actual questions and responses are shown in Exhibit 10.

Exhibit 12

Mean Baseline Knowledge Scores by Prior WIC Participation¹

	Southeast				Mountain Plains				Midwest				All Study Sites	
	Site 1		Site 2		Site 1		Site 2		Site 1		Site 2			
	Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation		Prior WIC Participation	
	No (n = 259)	Yes (n = 141)	No (n = 242)	Yes (n = 158)	No (n = 278)	Yes (n = 122)	No (n = 157)	Yes (n = 143)	No (n = 180)	Yes (n = 120)	No (n = 185)	Yes (n = 109)	No (n = 1301)	Yes (n = 793)
General nutrition knowledge	48.2%	51.7%	58.9%	59.0%	61.7%	62.2%	55.2%	58.0%	57.1%	57.1%	58.8%	62.1%	56.7%	58.1%
Healthy practices during pregnancy	72.0	68.3	91.9	91.8	93.8	93.0	93.6	92.8	93.3	94.2	94.7	94.7	89.2	88.7
Breastfeeding	66.8	66.0	67.7	72.0	68.6	73.0	65.4	73.1	67.9	79.2	68.0	72.0	67.5	72.4
Recommended infant feeding practices	45.7	61.8	64.2	77.3	67.1	75.4	62.3	74.5	66.2	70.5	66.7	74.3	61.6	72.3
Overall knowledge score	56.5	60.8	69.1	73.5	71.3	74.4	67.3	72.9	69.4	73.1	70.4	74.3	67.1	71.3

¹ Scores represent mean percent of items answered correctly within each topic area and across all topic areas (overall score).

Nutrition knowledge scores for each site were stratified by prior WIC participation (Exhibit 12). There were no appreciable differences between prior WIC participants and those without prior experience on measures of general nutrition knowledge or knowledge about healthy practices during pregnancy. Women who participated in WIC during a previous pregnancy did, however, demonstrate greater knowledge of breastfeeding and recommended infant feeding practices (4 percentage points and 10 percentage points higher, respectively, for the full sample). This pattern holds in all sites except Southeastern Site 1, where prior WIC participants and those without WIC experience had comparable levels of breastfeeding knowledge.

Attitudes and Related Constructs

Baseline attitudes regarding healthy eating. At the time of WIC enrollment, women in all study sites had relatively positive attitudes about healthy eating during pregnancy (Exhibit 13). The attitude measure that showed the greatest potential for improvement over time was attitude toward making changes in usual eating habits. In all sites except Mountain Plains Site 2, one-quarter or more of the women agreed or strongly agreed with the statement "I've been eating the same way for years, and at this point it would be very difficult for me to change." The negative attitude toward making changes was most pronounced among women in Southeastern Site 1; more than one-half of the women in this site agreed with the statement.

Baseline measures of self-efficacy. To assess baseline feelings of self-efficacy, or the ability to implement a desired behavior in a variety of potentially stressful or otherwise influential circumstances, sample members were presented with eight potentially difficult situations and asked to rate their ability to eat healthfully in each situation. Responses were provided on a five-point scale ranging from definitely yes (could eat healthfully) to definitely no (could not eat healthfully). While women in the study sample may know how to eat healthfully, and may value healthy eating appropriately, the data indicate that a number of factors may make it difficult for women to eat as healthfully as they might like (Exhibit 14).

The vast majority of sample members in all sites reported that they would probably or definitely have difficulty eating healthfully in at least one of the situations presented. More than one-third (36 percent) of all sample members indicated that they would have difficulty eating healthfully in four or more of the scenarios presented. The specific situations that pose the greatest threat to healthful eating are having a lot of non-nutritious foods in the house and feeling stressed.

Support for positive health behaviors. Research has shown that adoption of a desired health behavior may be strongly influenced by the support (positive or negative) provided by significant others. To obtain some measure of potential negative influences, respondents were asked whether anyone in their life has or might make it difficult for them to implement a desired health behavior, e.g., eating well during pregnancy, breastfeeding, reducing or eliminating alcohol consumption, and reducing or eliminating cigarette smoking.

As shown in Exhibit 15, the major problem women experience in this regard is related to cigarette smoking. Across all sites, 38 percent of women reported cigarette use in the three months prior to pregnancy. Almost one-

Exhibit 13

Baseline Attitude Measures Regarding Healthy Eating

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>If I take a vitamin pill in the morning, I don't have to worry about what I eat</i>							
Strongly agree	14.8%	0.0%	1.0%	0.3%	0.7%	1.3%	3.3%
Agree	19.0	3.0	1.8	0.7	4.0	1.3	5.4
Disagree	50.0	54.5	48.8	56.7	52.7	53.7	52.5
Strongly disagree	14.3	42.5	48.5	42.3	42.7	43.7	38.4
Don't know	2.0	0.0	0.0	0.0	0.0	0.0	0.4
<i>The food I eat has nothing to do with how well I feel</i>							
Strongly agree	18.5%	2.5%	2.3%	1.3%	2.7%	2.3%	5.3%
Agree	34.5	8.8	11.5	17.7	12.7	6.7	15.7
Disagree	36.5	57.3	47.3	52.7	51.0	53.3	49.3
Strongly disagree	6.5	31.3	38.3	27.3	33.0	36.7	28.3
Don't know	4.0	0.3	0.8	1.0	0.7	1.0	1.3
<i>My health depends on how well I take care of myself</i>							
Strongly agree	37.5%	63.5%	66.0%	59.7%	59.7%	59.7%	57.4%
Agree	55.5	35.5	33.0	39.7	39.3	40.0	40.6
Disagree	5.0	0.5	0.8	0.0	0.3	0.3	1.3
Strongly disagree	1.0	0.5	0.3	0.3	0.7	0.0	0.5
Don't know	1.0	0.0	0.0	0.3	0.0	0.0	0.2
<i>I've been eating the same way for years and at this point it would be very difficult for me to change</i>							
Strongly agree	12.5%	4.5%	4.0%	1.3%	1.3%	3.0%	4.8%
Agree	40.0	20.3	20.0	15.7	28.3	24.0	25.0
Disagree	39.0	60.0	62.3	70.7	58.3	61.0	57.9
Strongly disagree	8.3	14.8	13.8	12.3	12.0	11.7	12.1
Don't know	0.3	0.5	0.0	0.0	0.0	0.3	0.2

Exhibit 13 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Healthy eating is a matter of common sense</i>							
Strongly agree	23.5%	29.8%	26.0%	26.0%	27.0%	25.3%	26.3%
Agree	56.5	55.5	60.3	63.7	58.3	64.0	59.4
Disagree	14.3	13.0	12.3	10.3	14.3	9.7	12.4
Strongly disagree	2.5	1.3	1.0	0.0	0.3	0.7	1.0
Don't know	3.3	0.5	0.5	0.0	0.0	0.3	0.9
<i>I feel better physically when I eat nutritious foods</i>							
Strongly agree	31.3%	37.5%	31.5%	34.0%	34.3%	37.3%	34.2%
Agree	58.5	57.3	59.5	61.7	62.0	57.7	59.3
Disagree	7.8	4.5	7.8	4.0	3.0	4.0	5.4
Strongly disagree	1.3	0.3	0.5	0.0	0.3	0.3	0.5
Don't know	1.3	0.5	0.8	0.3	0.3	0.7	0.7
<i>If I do not eat well my health will suffer</i>							
Strongly agree	31.5%	39.3%	36.8%	36.7%	36.3%	30.7%	35.3%
Agree	59.0	52.0	53.5	56.0	55.0	62.3	56.1
Disagree	5.3	6.5	8.0	5.3	7.0	5.0	6.2
Strongly disagree	3.5	2.0	1.5	1.7	1.7	1.7	2.0
Don't know	0.8	0.3	0.3	0.3	0.0	0.3	0.3
<i>Overall Attitude Score¹</i>							
Mean	2.7	3.1	3.1	3.1	3.1	3.1	3.0
Range:							
Minimum	1.9	2.3	2.1	2.3	2.3	2.3	1.9
Maximum	3.7	3.9	3.9	3.7	3.9	3.9	3.9

¹ Mean score for all attitude items on a scale of one to four; the lower the score, the less positive the attitude.

Exhibit 14

Baseline Self-Efficacy Measures Regarding Healthy Eating

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Are you able to eat healthy when...</i>							
<i>You are eating out?</i>							
Definitely yes	16.5%	27.5%	21.8%	18.3%	17.0%	15.0%	19.7%
Probably yes	24.8	34.5	35.5	34.7	32.3	34.0	32.5
Maybe	16.3	21.5	23.3	25.7	24.3	28.7	22.9
Probably no	29.8	12.0	17.3	15.7	19.0	13.0	18.0
Definitely no	8.0	4.3	2.3	4.7	7.0	9.3	5.8
Don't know	4.8	0.3	0.0	1.0	0.3	0.0	1.1
<i>You have no time to plan and prepare meals?</i>							
Definitely yes	14.3%	12.0%	5.3%	7.7%	9.3%	5.0%	9.1%
Probably yes	22.5	27.5	32.5	28.7	27.3	23.0	27.0
Maybe	20.5	30.0	33.0	31.3	33.3	36.3	30.3
Probably no	32.8	23.5	25.3	25.7	24.7	29.0	26.9
Definitely no	7.8	6.8	3.8	6.7	5.3	6.7	6.1
Don't know	2.3	0.3	0.3	0.0	0.0	0.0	0.5
<i>You are feeling stressed?</i>							
Definitely yes	14.0%	11.3%	8.3%	5.7%	6.7%	5.3%	8.9%
Probably yes	20.0	16.8	17.8	20.0	18.0	12.0	17.5
Maybe	16.5	26.0	31.8	25.0	25.7	31.7	25.9
Probably no	38.8	29.3	32.8	36.7	33.7	35.0	34.2
Definitely no	9.5	16.5	9.5	12.3	16.0	16.0	13.1
Don't know	1.3	0.3	0.0	0.3	0.0	0.0	0.3

Exhibit 14 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>You are bored?</i>							
Definitely yes	11.5%	19.3%	18.5%	18.0%	20.7%	15.7%	17.1%
Probably yes	20.3	26.5	29.3	32.0	25.3	33.7	27.5
Maybe	17.3	22.5	24.5	17.3	19.7	20.3	20.4
Probably no	40.0	22.5	23.0	23.7	26.7	22.3	26.7
Definitely no	9.5	9.3	4.5	9.0	7.7	8.0	8.0
Don't know	1.5	0.0	0.3	0.0	0.0	0.0	0.3
<i>You have not eaten all day and are starving?</i>							
Definitely yes	11.8%	22.3%	22.8%	22.7%	22.7%	18.7%	20.0%
Probably yes	29.5	17.3	22.3	29.0	23.3	22.3	23.8
Maybe	16.5	20.8	23.5	17.0	14.0	22.3	19.2
Probably no	30.0	24.3	24.0	17.7	24.0	24.0	24.3
Definitely no	10.5	15.5	7.5	12.3	16.0	12.7	12.2
Don't know	1.8	0.0	0.0	1.3	0.0	0.0	0.5
<i>Someone else prepares your meals?</i>							
Definitely yes	20.3%	22.5%	21.3%	26.3%	23.3%	26.3%	23.0%
Probably yes	36.3	35.5	37.0	34.3	32.3	34.7	35.2
Maybe	18.5	28.3	28.3	32.3	31.0	28.7	27.4
Probably no	14.8	10.5	9.8	5.3	9.3	6.7	9.7
Definitely no	9.5	3.3	3.8	1.7	3.3	3.3	4.3
Don't know	0.8	0.0	0.0	0.0	0.7	0.3	0.3

Exhibit 14 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>There are a lot of non-nutritious foods in the house?</i>							
Definitely yes	11.3%	3.5%	4.3%	5.0%	5.7%	2.7%	5.5%
Probably yes	27.5	7.0	10.3	16.3	9.7	8.7	13.5
Maybe	15.8	17.5	21.3	20.3	20.3	17.0	18.6
Probably no	32.3	41.8	47.0	33.7	40.0	41.3	39.5
Definitely no	11.3	29.8	17.3	24.7	24.0	30.0	22.3
Don't know	2.0	0.5	0.0	0.0	0.3	0.3	0.6
<i>You have strong cravings for certain foods?</i>							
Definitely yes	16.8%	12.3%	10.5%	8.7%	11.3%	12.7%	12.2%
Probably yes	38.3	19.3	23.5	22.3	18.7	12.3	23.0
Maybe	23.0	29.8	33.8	33.3	34.3	32.3	30.8
Probably no	16.0	27.0	22.3	25.7	23.7	26.7	23.3
Definitely no	4.5	11.8	9.8	10.0	12.0	13.0	10.0
Don't know	1.5	0.0	0.3	0.0	0.0	3.0	0.8
<i>Total number of problem situations¹</i>							
0 situations	20.3%	9.5%	11.3%	12.7%	8.3%	7.0%	11.8%
1 situation	10.8	16.0	17.5	15.7	13.3	14.3	14.6
2 situations	11.0	18.5	21.8	20.3	22.0	19.0	18.5
3 situations	15.5	19.8	21.0	21.7	18.0	21.0	19.4
4 situations	13.5	17.8	15.3	14.0	17.7	20.3	16.3
5 or more situations	29.0	18.5	13.3	15.7	20.7	18.3	19.4
Mean (number of situations)	3.0	2.9	2.6	2.7	2.9	3.0	2.8

¹ Number of situations in which respondent indicated that she would probably or definitely not be able to eat healthfully.

Exhibit 15

Support for Positive Health Behaviors

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Is there anyone in your life who has or might make it difficult for you to...</i>							
<i>Eat well during pregnancy?</i>							
Yes	6.0%	7.0%	11.0%	9.3%	13.7%	15.3%	10.0%
No	93.5	93.0	88.5	90.3	86.3	84.7	89.7
<i>Formula feed your baby?</i>							
Yes	2.5%	1.5%	3.8%	4.7%	2.3%	4.0%	3.0%
No	96.5	98.5	95.5	95.0	97.3	96.0	96.5
<i>Breastfeed your baby?</i>							
Yes	4.8%	6.3%	6.5%	7.7%	7.3%	11.3%	7.1%
No	94.5	93.5	93.5	92.0	92.0	88.3	92.5
<i>Cut down or quit drinking alcohol?</i>							
Did not use prior to pregnancy	84.6%	55.8%	40.4%	41.8%	55.1%	55.4%	56.1%
Used prior to pregnancy	15.4	44.3	59.6	58.2	44.9	44.6	43.9
Yes ¹	6.6	6.2	5.0	5.8	6.9	3.8	5.6
No ¹	86.9	89.8	92.9	93.7	89.3	96.2	92.0
Don't know ¹	6.6	4.0	2.1	0.6	3.8	0.0	2.4
<i>Cut down or quit cigarette smoking?</i>							
Did not use prior to pregnancy	96.3%	64.0%	50.8%	54.0%	50.0%	48.0%	61.9%
Used prior to pregnancy	3.8	36.0	49.3	46.0	50.0	52.0	38.1
Yes ²	0.0	16.0	21.8	20.3	29.1	32.1	23.4
No ²	100.0	81.9	78.2	79.0	68.9	68.0	75.7
Don't know ²	0.0	2.1	0.0	0.7	2.0	0.0	0.9

¹ Percentages based on sample members who reported drinking alcohol prior to pregnancy.

² Percentages based on sample members who reported smoking cigarettes prior to pregnancy.

quarter of these women indicated that someone in their life might make it difficult for them to cut down or quit smoking; almost one-third of the smokers in Midwestern Site 2 reported this potential obstacle.

Ten percent of all women indicated that their efforts to eat well during pregnancy may be compromised by a lack of appropriate social support. Seven percent indicated that their endeavors to breastfeed might be similarly compromised. Interestingly, reports of non-support in both of these areas were also highest in Midwestern Site 2.

Perceptions about health status, eating habits and pregnancy weight gain. Eating habits and other behaviors may be influenced by our perceptions about certain things. For example, a woman who is concerned that she has gained too much weight during her pregnancy may be more likely to avoid high-calorie/low-nutrient foods.

The baseline survey included three items to assess women's perceptions about their current health status and eating habits, as well as perceptions about their weight gain during this pregnancy. Results are displayed in Exhibit 16. While one-quarter of respondents rate their overall health as fair to poor, only 16 percent rate their eating habits as less than healthful. Moreover, about one-half of all sample members felt fully comfortable (reported "gained the right amount") with the amount of weight they had gained at the time of the baseline interview. Note that about 40 percent of women were still in their first trimester of pregnancy.

Behavioral beliefs and evaluation factors related to infant feeding choices. The decision to initiate breastfeeding, one of the major outcomes of interest in this study, is influenced by a wide variety of factors. According to the *theory of reasoned action*⁸, which has been used as the conceptual framework for several studies of breastfeeding decisions, a person's intention to perform a particular behavior is determined by a personal attitude factor as well as a social or "normative" factor, i.e., how others feel about the behavior.

In order to obtain a complete picture of women's underlying attitudes about breastfeeding, it is necessary to assess perceptions about the consequences, i.e., advantages and disadvantages of breastfeeding (behavioral beliefs), as well as the relative importance attached to each potential consequence (evaluation factors). Exhibit 17 lists all of the behavioral beliefs and evaluation factors included in the survey. For the behavioral belief items, women were asked to respond on a six-point scale ranging from strongly agree to strongly disagree. A different six point scale, ranging from extremely important to not at all important, was used for responding to the evaluation items.

Exhibit 18 shows mean scores for each item broken down by intended feeding method (breastfeeding only, breastfeeding plus formula, and formula feeding

Azjen, I. and M. Fishbein (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Exhibit 16

Perceptions About Weight Gain and Health Habits

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Rating of overall health</i>							
Excellent	8.3%	7.8%	6.3%	7.3%	5.3%	4.3%	6.7%
Very good	15.5	23.8	25.0	26.0	22.0	24.7	22.6
Good	45.3	47.0	46.3	42.7	45.0	46.0	45.5
Fair	28.0	17.8	20.5	22.7	26.7	23.3	23.0
Poor	2.8	3.3	2.0	1.3	1.0	1.7	2.1
<i>Rating of eating habits</i>							
Very healthy	10.5%	13.5%	10.3%	13.0%	13.7%	9.7%	11.7%
Somewhat healthy	73.8	69.0	74.5	73.7	68.3	73.0	72.1
Somewhat unhealthy	12.3	14.8	13.3	12.3	16.3	15.7	14.0
Very unhealthy	2.3	2.8	1.5	0.7	1.7	1.7	1.8
<i>Perceptions about current pregnancy weight gain</i>							
Gained too much	16.3%	18.5%	15.8%	15.0%	21.3%	15.3%	17.0%
Gained too little	35.5	8.5	9.3	5.3	8.7	7.7	13.2
Gained right amount	29.0	50.5	54.0	61.7	51.7	57.0	49.8
Lost weight	18.0	21.0	16.0	15.0	16.7	13.0	16.9
Don't know	1.3	1.5	5.0	3.0	1.7	7.0	3.1

Exhibit 17

Behavioral Belief Items and Evaluation Items

BEHAVIORAL BELIEF ITEMS

Breastfeeding...

is a very convenient method of feeding baby

helps protect baby against infection

helps mother feel close to baby

helps mother lose weight

is embarrassing for the mother

makes it difficult for the mother to go out

is difficult to do successfully

is the best nourishment for baby

requires the mother to watch what she eats and drinks

Bottle feeding...

increases chances that the baby will have colic

provides incomplete nourishment for baby

makes it easier for other family members to be involved in feeding baby

makes it easier for the mother to go to work or school

is an expensive method of feeding

is a trouble-free method of feeding

allows one to see exactly how much milk baby has had

EVALUATION ITEMS

How important is it that the feeding method you choose...

is convenient?

helps protect baby against infection?

helps you feel close to baby?

helps you lose weight?

provides complete nourishment for baby?

allows baby's father or other family members to feed baby?

does not make you feel embarrassed?

allows you to go out socially?

makes it easy for you to go to work or school?

is trouble free?

is inexpensive?

allows you to see exactly how much milk baby has had?

decreases the chance of getting colic?

does not require you to watch what you eat or drink?

Exhibit 18

Mean Behavioral Belief and Evaluation Factor Scores by Planned Infant Feeding Method

	Planned Infant Feeding Method		
	Breastfeeding Only	Breastfeeding Plus Formula	Formula Only
	(n = 427)	(n = 901)	(n = 772)
<i>Behavioral beliefs¹</i>			
Breastfeeding is a very convenient method of feeding baby	1.9	2.1	3.0
Bottle feeding increases chances that the baby will have colic	3.0	3.0	3.3
Breastfeeding helps protect baby against infection	1.5	1.7	2.5
Breastfeeding helps mother feel closer to baby	1.4	1.6	2.3
Breastfeeding helps mother lose weight	2.6	2.8	3.4
Bottle feeding provides incomplete nourishment for baby	3.3	3.4	4.0
Bottle feeding makes it easier for other family members to be involved in feeding baby	2.3	2.0	1.8
Breastfeeding is embarrassing for the mother	4.9	4.4	3.7
Breastfeeding makes it difficult for the mother to go out	4.2	3.6	3.1
It is difficult to breastfeed successfully	4.6	4.1	3.7
Bottle feeding makes it easier for the mother to go to work or school	2.7	2.4	2.0
Breast milk is the best nourishment for baby	1.4	1.6	2.1
Bottle feeding is an expensive method of feeding	2.3	2.4	2.3
Bottle feeding is a trouble free method of feeding	3.9	3.4	3.3
Bottle feeding allows one to see exactly how much milk baby has had	2.2	2.1	2.0
Breastfeeding requires the mother to watch what she eats and drinks	1.7	1.7	1.9

Exhibit 18 (continued)

	Planned Infant Feeding Method		
	Breastfeeding Only	Breastfeeding Plus Formula	Formula Only
	(n = 427)	(n = 901)	(n = 772)
Evaluation factors¹			
<i>How important is it that the feeding method you choose...</i>			
Is convenient?	2.6	2.2	2.1
Helps protect baby against infection?	1.3	1.4	1.6
Helps you feel closer to baby?	1.5	1.6	1.9
Helps you lose weight?	3.3	3.1	3.6
Provides complete nourishment for baby?	1.3	1.4	1.5
Allows baby's father or other family members to feed baby?	2.7	2.4	2.1
Does not make you feel embarrassed?	3.9	3.6	3.2
Allows you to go out socially?	4.2	3.8	3.6
Makes it easy for you to go to work or school?	3.4	2.8	2.4
Is trouble free?	3.6	3.2	3.0
Is inexpensive?	2.8	2.8	2.8
Allows you to see exactly how much milk baby has had?	3.2	2.6	2.2
Decreases the chance of getting colic?	2.0	1.9	2.0
Does not require you to watch what you eat or drink?	3.8	3.2	3.1

¹ Mean scores based on a six-point scale. Lower scores indicate greater agreement with statement.

² Mean scores based on a six-point scale. Lower scores indicate higher value placed on factor (more important).

only).⁹ Scores were assigned in relation to the six-point response scales with lower scores indicating higher degrees of agreement with behavioral beliefs items and higher value placed on evaluation factors. Don't know responses were coded to the mid-point on the scale (e.g., neither agree nor disagree).

The response patterns seen in Exhibit 18 are consistent with expectations. Women who report an intention to formula feed exclusively are less likely than those who plan to breastfeed, either exclusively or in combination with formula feeding, to believe that breastfeeding is convenient, that breastfeeding helps protect babies from infections, and that formula feeding provides incomplete nourishment for the baby.

Behaviors

Reported food consumption. Women's reported food consumption patterns (intake over the last month) are summarized in Exhibit 19. The data show that substantial numbers of women were not regularly consuming WIC foods at the time of WIC enrollment. Moreover, many women reported regular use of the less nutritious, non-WIC foods included in the frequency listing.

Exhibit B3 (Appendix B) displays reported food consumption data for the full sample stratified by prior WIC participation. No appreciable differences in food consumption were noted for women with and without prior WIC experience.

Exhibit 20 presents data on changes women have reportedly made in their usual eating habits since becoming pregnant (current pregnancy). For most foods queried, fewer than 50 percent of women, across all sites, reported making a change. Exceptions to this rule include milk, 100 percent fruit juice, and fruit, consumption of which reportedly increased for 50 percent or more women across all sites, as well as baked desserts (cookies, cakes, and pastries), and candy, which decreased.

Factors influencing food consumption during pregnancy. A number of factors, prime among them being morning sickness and food aversions and cravings, can affect the type and amount of food a pregnant woman consumes. Roughly one-half of sample members indicated that their appetite had increased since becoming pregnant (Exhibit 21). Just over one-third reported consuming foods that they had not liked prior to pregnancy. At the same time, 46 percent of women found that they were no longer interested in consuming one or more foods that they had consumed prior to pregnancy.

Approximately 30 percent of women reported that they found it difficult to eat healthfully during pregnancy (Exhibit 22). Ninety percent reported occasional consumption of foods that they knew were not healthful (agreed or strongly agreed with the statement "Sometimes I eat foods that I like but I know aren't good for me.") Major reasons cited for difficulties with healthy eating were, in descending order of predominance for the sample as a whole, morning sickness; preference for less-healthy foods; food aversions or changes in appetite; inadequate financial resources; and convenience.

⁹Frequencies for each of the behavioral belief items and for the evaluation factors are reported in Exhibits B1 and B2 (Appendix B), respectively.

Exhibit 19

Food Consumption Patterns Over the Past Month

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)

Over the past month, how often did you eat or drink...

Milk?

Never	6.5%	7.0%	5.3%	6.0%	7.0%	8.3%	6.6%
1-2 times per month	6.0	7.3	7.8	5.0	7.3	7.3	6.8
1-2 times per week	8.8	14.8	8.5	10.0	9.7	7.0	9.9
3-6 times per week	10.8	12.0	14.8	11.7	12.3	9.7	12.0
1-2 times per day	53.5	41.0	34.5	42.3	33.0	33.0	40.0
3 or more times per day	14.5	18.0	29.3	25.0	30.7	34.7	24.7

Cheese?

Never	16.3%	7.8%	6.3%	4.3%	4.7%	9.3%	8.4%
1-2 times per month	11.8	9.5	14.3	7.7	10.7	12.0	11.1
1-2 times per week	21.8	24.3	22.3	21.7	24.0	23.3	22.9
3-6 times per week	19.0	28.0	22.0	27.7	23.7	21.0	23.5
1-2 times per day	26.6	22.8	27.5	30.7	28.7	23.0	26.4
3 or more times per day	4.5	7.8	7.8	8.0	8.3	11.3	7.8

Eggs?

Never	14.8%	14.8%	11.0%	14.3%	15.7%	17.7%	14.5%
1-2 times per month	10.3	15.5	16.8	18.0	18.0	25.7	16.9
1-2 times per week	28.6	33.5	29.0	30.7	29.0	28.0	29.9
3-6 times per week	21.6	19.8	24.8	19.3	21.7	17.7	21.0
1-2 times per day	23.4	15.3	16.3	17.3	13.3	8.3	16.0
3 or more times per day	1.3	1.3	2.3	0.3	2.3	2.7	1.7

Exhibit 19 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Tuna fish?</i>							
Never	53.8%	39.8%	43.0%	38.3%	43.3%	56.0%	45.7%
1-2 times per month	14.3	29.3	29.3	37.6	28.7	26.7	27.1
1-2 times per week	19.3	19.5	19.5	16.4	20.7	13.3	18.3
3-6 times per week	5.8	7.8	6.3	7.0	4.7	2.7	5.8
1-2 times per day	6.3	3.5	1.8	0.3	2.3	0.3	2.6
3 or more times per day	0.5	0.3	0.3	0.3	0.3	1.0	0.4
<i>Non-fried meat, chicken or fish (excluding tuna)?</i>							
Never	8.5%	14.8%	11.0%	12.8%	12.7%	20.1%	13.0%
1-2 times per month	9.3	11.8	13.3	11.1	13.7	12.7	11.9
1-2 times per week	21.3	28.5	26.0	22.5	25.8	24.4	24.8
3-6 times per week	20.1	26.8	22.0	30.9	25.1	23.4	24.4
1-2 times per day	39.6	17.0	25.8	19.8	21.4	17.1	24.0
3 or more times per day	1.3	1.3	2.0	3.0	1.3	2.3	1.8
<i>Fried foods such as fried chicken, fish or french fries?</i>							
Never	17.0%	14.8%	7.5%	5.0%	6.0%	6.7%	10.0%
1-2 times per month	15.3	10.8	17.8	12.0	14.3	10.0	13.5
1-2 times per week	31.8	34.3	34.0	25.7	31.0	28.3	31.2
3-6 times per week	16.0	23.8	24.5	31.7	28.3	29.0	25.0
1-2 times per day	18.5	15.3	14.0	23.7	16.7	21.3	17.9
3 or more times per day	1.5	1.3	2.3	2.0	3.7	4.7	2.4

Exhibit 19 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Peanut butter?</i>							
Never	63.2%	44.5%	37.3%	34.8%	32.0%	39.3%	42.8%
1-2 times per month	11.0	14.8	19.5	21.7	24.7	19.3	18.0
1-2 times per week	12.0	22.3	17.0	21.1	18.7	20.3	18.4
3-6 times per week	4.5	9.8	13.0	10.7	11.3	12.0	10.1
1-2 times per day	7.5	8.3	11.3	9.7	11.0	8.0	9.2
3 or more times per day	1.8	0.5	2.0	2.0	2.3	1.0	1.6
<i>100% fruit juice?</i>							
Never	10.0%	13.8%	14.3%	9.3%	8.3%	17.4%	12.2%
1-2 times per month	7.8	7.0	8.3	8.7	12.0	14.4	9.4
1-2 times per week	15.5	15.0	16.3	14.3	14.0	13.0	14.8
3-6 times per week	9.5	16.8	16.0	17.7	15.7	12.0	14.5
1-2 times per day	40.5	30.3	25.8	32.0	32.3	29.1	31.7
3 or more times per day	16.8	17.3	19.5	18.0	17.7	14.0	17.3
<i>Regular (not diet) soft drinks?</i>							
Never	35.0%	14.0%	11.3%	8.0%	17.3%	7.0%	16.1%
1-2 times per month	10.1	5.5	12.5	10.0	7.7	3.7	8.4
1-2 times per week	17.1	16.8	20.0	18.0	14.3	14.7	17.0
3-6 times per week	9.8	13.0	14.3	16.0	10.3	9.0	12.1
1-2 times per day	21.4	35.0	30.8	35.7	26.7	33.7	30.3
3 or more times per day	6.5	15.8	11.3	12.3	23.7	32.0	16.1

Exhibit 19 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Fruit (fresh, frozen or canned)?</i>							
Never	6.0%	5.8%	5.8%	6.0%	2.3%	6.0%	5.4%
1-2 times per month	6.8	6.3	11.8	4.3	8.0	11.3	8.1
1-2 times per week	17.1	20.5	15.0	14.7	22.3	22.7	18.5
3-6 times per week	15.8	22.8	22.8	21.3	15.7	19.0	19.7
1-2 times per day	43.5	34.5	33.3	39.3	37.7	28.3	36.2
3 or more times per day	10.8	10.3	11.5	14.3	14.0	12.7	12.1
<i>Vegetables, excluding legumes, (fresh, frozen or canned)?</i>							
Never	8.5%	5.3%	3.3%	4.7%	8.7%	5.7%	6.0%
1-2 times per month	9.8	4.5	8.8	5.0	7.7	8.0	7.3
1-2 times per week	22.3	19.3	19.5	19.3	16.0	18.3	19.3
3-6 times per week	18.3	26.5	27.5	23.3	23.3	21.0	23.4
1-2 times per day	35.8	40.8	37.5	40.7	38.0	41.0	38.8
3 or more times per day	5.5	3.8	3.5	7.0	6.3	6.0	5.2
<i>Legumes (dried beans and peas)?</i>							
Never	10.3%	21.8%	23.5%	11.3%	32.3%	37.1%	22.1%
1-2 times per month	12.5	13.3	21.0	22.7	20.7	21.1	18.1
1-2 times per week	22.1	39.8	31.5	38.0	24.7	25.4	30.4
3-6 times per week	19.5	18.5	15.3	20.7	12.7	10.4	16.4
1-2 times per day	32.1	5.8	8.3	7.0	8.0	4.3	11.5
3 or more times per day	3.5	1.0	0.5	0.3	1.7	1.7	1.5

Exhibit 19 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
WIC breakfast cereals?							
Never	27.3%	15.0%	15.0%	17.0%	18.0%	22.1%	19.1%
1-2 times per month	8.3	6.5	10.3	11.7	13.0	16.1	10.6
1-2 times per week	15.3	21.1	14.3	16.3	19.7	20.4	17.7
3-6 times per week	13.5	21.8	20.0	20.7	15.7	14.4	17.8
1-2 times per day	34.3	35.1	38.0	33.0	32.0	24.7	33.3
3 or more times per day	1.5	0.5	2.5	1.3	1.7	2.3	1.6
Cookies, cakes or pastries?							
Never	23.6%	23.3%	13.0%	13.0%	10.0%	13.0%	16.5%
1-2 times per month	16.0	15.5	23.8	18.3	16.7	19.0	18.3
1-2 times per week	27.1	30.0	32.3	31.7	29.1	31.3	30.2
3-6 times per week	8.5	13.8	14.8	14.3	14.4	14.3	13.2
1-2 times per day	23.1	14.5	13.0	19.7	21.1	17.7	18.0
3 or more times per day	1.8	3.0	3.3	3.0	8.7	4.7	3.9
Candy (any type)?							
Never	42.6%	35.0%	22.1%	22.7%	23.3%	17.7%	28.0%
1-2 times per month	17.5	18.5	27.1	20.3	20.3	23.0	21.1
1-2 times per week	17.8	20.0	23.1	24.7	22.0	28.0	22.3
3-6 times per week	9.9	11.5	11.5	10.3	12.3	10.7	11.0
1-2 times per day	9.9	11.5	12.5	17.3	15.7	13.3	13.1
3 or more times per day	2.3	3.5	3.8	4.7	6.3	7.3	4.4

Exhibit 19 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Snacks, such as chips, pretzels, packaged popcorn?</i>							
Never	47.8%	15.0%	13.3%	10.0%	9.0%	11.7%	18.9%
1-2 times per month	16.8	17.8	18.8	16.0	9.3	15.0	15.9
1-2 times per week	19.5	31.8	33.6	37.3	31.0	33.7	30.7
3-6 times per week	6.5	19.8	16.5	15.0	19.7	18.3	15.7
1-2 times per day	8.3	14.3	14.8	18.0	24.3	15.3	15.3
3 or more times per day	1.3	1.5	3.0	3.7	6.7	6.0	3.4

Exhibit 20

Changes in Food Consumption Since Pregnancy

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)

Compared to before you were pregnant, are you eating more, less or the same amount of...¹

Milk?

	(n = 372)	(n = 372)	(n = 379)	(n = 282)	(n = 279)	(n = 274)	(n = 1958)
More	50.0%	53.8%	58.0%	61.0%	58.8%	58.4%	56.3%
Less	11.8	8.9	8.2	12.4	10.0	7.7	9.8
Same	38.2	37.4	33.8	26.6	31.2	33.9	33.9

Cheese?

	(n = 333)	(n = 369)	(n = 375)	(n = 287)	(n = 285)	(n = 272)	(n = 1921)
More	35.1%	22.5%	25.6%	23.3%	21.8%	18.0%	24.7%
Less	16.8	12.7	11.7	9.1	12.6	12.5	12.6
Same	48.0	64.8	62.7	67.6	65.6	69.5	62.7

Eggs?

	(n = 337)	(n = 341)	(n = 356)	(n = 257)	(n = 252)	(n = 247)	(n = 1790)
More	33.2%	21.1%	28.7%	22.2%	21.4%	23.1%	25.4%
Less	19.9	14.4	12.6	14.8	15.9	15.0	15.4
Same	46.9	64.5	58.7	63.0	62.7	61.9	59.2

Tuna fish?

	(n = 183)	(n = 241)	(n = 228)	(n = 183)	(n = 170)	(n = 132)	(n = 1137)
More	19.7%	14.5%	21.1%	14.2%	11.8%	17.4%	16.5%
Less	20.2	14.9	12.3	10.4	12.9	9.1	13.5
Same	60.1	70.5	66.7	75.4	75.3	73.5	69.9

¹ Calculations include only sample members who reported consuming the food at least once during the past month.

Exhibit 20 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Non-fried meat, chicken or fish (excluding tuna)?</i>							
	(n = 362)	(n = 341)	(n = 356)	(n = 260)	(n = 261)	(n = 239)	(n = 1819)
More	26.8%	14.4%	16.3%	15.4%	18.4%	18.4%	18.5%
Less	21.8	11.7	11.8	7.7	9.6	7.9	12.4
Same	51.4	73.9	71.9	76.9	72.0	73.6	69.2
<i>Fried foods such as fried chicken, fish or french fries?</i>							
	(n = 329)	(n = 341)	(n = 370)	(n = 285)	(n = 282)	(n = 280)	(n = 1887)
More	22.5%	10.9%	16.2%	17.2%	15.6%	12.5%	15.8%
Less	24.0	22.3	24.9	18.6	24.1	17.5	22.1
Same	53.5	66.9	58.9	64.2	60.3	70.0	62.1
<i>Peanut butter?</i>							
	(n = 146)	(n = 222)	(n = 250)	(n = 195)	(n = 204)	(n = 182)	(n = 1199)
More	25.3%	23.4%	40.0%	40.0%	28.9%	28.6%	31.5%
Less	19.2	14.0	8.4	6.7	10.8	8.2	10.8
Same	55.5	62.6	51.6	53.3	60.3	63.2	57.6
<i>100% fruit juice?</i>							
	(n = 357)	(n = 345)	(n = 343)	(n = 272)	(n = 274)	(n = 247)	(n = 1838)
More	43.4%	46.4%	52.2%	58.5%	51.1%	50.2%	49.9%
Less	13.7	8.1	7.0	4.0	8.0	5.7	8.1
Same	42.9	45.5	40.8	37.5	40.9	44.1	42.1
<i>Regular (not diet) soft drinks?</i>							
	(n = 257)	(n = 344)	(n = 355)	(n = 276)	(n = 247)	(n = 279)	(n = 1758)
More	25.7%	25.9%	15.2%	16.3%	16.2%	14.0%	18.9%
Less	26.5	29.1	38.6	37.7	42.5	36.9	35.1
Same	47.9	45.1	46.2	46.0	41.3	49.1	46.0

Exhibit 20 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Fruit (fresh, frozen or canned)?</i>							
	(n = 371)	(n = 377)	(n = 377)	(n = 282)	(n = 292)	(n = 282)	(n = 1981)
More	43.4%	47.2%	56.2%	56.7%	50.0%	46.8%	49.9%
Less	12.7	5.3	9.0	5.7	6.2	5.3	7.6
Same	43.9	47.5	34.7	37.6	43.8	47.9	42.5
<i>Vegetables, excluding legumes, (fresh, frozen or canned)?</i>							
	(n = 364)	(n = 379)	(n = 385)	(n = 286)	(n = 274)	(n = 282)	(n = 1970)
More	36.3%	28.5%	30.9%	33.2%	28.8%	24.8%	30.6%
Less	14.0	9.8	8.6	6.3	5.1	7.4	8.8
Same	49.7	61.7	60.5	60.5	66.1	67.7	60.6
<i>Legumes (dried beans and peas)?</i>							
	(n = 354)	(n = 312)	(n = 306)	(n = 266)	(n = 203)	(n = 188)	(n = 1629)
More	26.0%	19.9%	18.0%	11.7%	15.3%	10.6%	17.9%
Less	18.1	9.3	10.1	8.3	10.8	9.0	11.4
Same	55.9	70.8	71.9	80.1	73.9	80.3	70.8
<i>WIC breakfast cereals?</i>							
	(n = 291)	(n = 338)	(n = 340)	(n = 249)	(n = 246)	(n = 233)	(n = 1697)
More	34.0%	30.2%	45.0%	42.2%	36.2%	35.2%	37.1%
Less	14.4	6.5	9.1	4.0	9.8	5.6	8.4
Same	51.5	63.3	45.9	53.8	54.1	59.2	54.5
<i>Cookies, cakes or pastries?</i>							
	(n = 303)	(n = 307)	(n = 348)	(n = 261)	(n = 268)	(n = 261)	(n = 1748)
More	27.4%	21.8%	28.2%	34.1%	25.4%	20.3%	26.2%
Less	18.2	29.6	26.7	24.1	27.2	21.8	24.7
Same	54.5	48.5	45.1	41.8	47.4	57.9	49.1

Exhibit 20 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(s1p10vs3b4148T
<i>Candy (any type)?</i>							
	(n = 224)	(n = 260)	(n = 310)	(n = 232)	(n = 227)	(n = 247)	(n = 1500)
More	20.1 %	19.6 %	26.1 %	29.3 %	19.4 %	21.9 %	22.9 %
Less	25.9	32.3	33.5	25.0	29.1	23.9	28.6
Same	54.0	48.1	40.3	45.7	51.5	54.3	48.5
<i>Snacks, such as chips, pretzels, packaged popcorn?</i>							
	(n = 208)	(n = 339)	(n = 344)	(n = 270)	(n = 272)	(n = 265)	(n = 1698)
More	13.9 %	19.2 %	19.5 %	23.0 %	21.7 %	19.2 %	19.6 %
Less	33.2	23.3	26.5	21.9	22.8	18.5	24.1
Same	52.9	57.5	54.1	55.2	55.5	62.3	56.3

Exhibit 21

Changes in Appetite/Cravings Associated with Pregnancy

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Has your appetite remained the same, increased, or decreased since becoming pregnant?</i>							
Remained same	27.8%	18.0%	15.6%	16.0%	22.0%	19.2%	19.9%
Increased	47.0	53.9	59.4	60.3	56.0	56.0	55.2
Decreased	25.3	28.1	24.9	23.7	22.0	24.7	25.0
<i>Do you eat foods now that you didn't like before you were pregnant?</i>							
Yes	35.0%	39.3%	37.0%	36.7%	28.3%	31.7%	35.0%
No	65.0	60.7	63.0	63.3	71.7	68.3	65.0
<i>Have you stopped eating any foods because you don't like them now that you are pregnant?</i>							
Yes	46.4%	46.9%	52.0%	49.5%	37.8%	40.1%	45.9%
No	53.6	53.1	48.0	50.5	62.2	59.9	54.1

Exhibit 22

Difficulties Eating Healthfully During Pregnancy

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Have you found it difficult to eat healthfully during pregnancy?</i>							
Yes	32.2%	27.5%	33.8%	29.0%	23.3%	27.3%	29.2%
No	67.8	72.5	66.3	71.0	76.7	72.7	70.8
<i>Sometimes I eat foods that I like but I know they aren't good for me</i>							
Strongly agree	17.5%	25.0%	25.5%	17.7%	23.7%	26.3%	22.6%
Agree	57.5	68.3	67.8	74.7	67.7	67.3	66.8
Disagree	18.5	5.3	5.8	6.7	8.3	5.0	8.5
Strongly disagree	6.5	1.5	1.0	1.0	0.3	0.7	2.0
Don't know	0.0	0.0	0.0	0.0	0.0	0.7	0.1
<i>Sometimes I eat what everybody else is eating even if I know it is not good for me</i>							
Strongly agree	12.3%	7.8%	7.5%	5.7%	8.7%	7.7%	8.4%
Agree	39.3	41.3	40.5	45.3	38.0	37.3	40.3
Disagree	39.5	43.0	45.0	46.0	46.3	48.0	44.3
Strongly disagree	8.5	8.0	7.0	3.0	6.7	6.3	6.8
Don't know	0.5	0.0	0.0	0.0	0.3	0.7	0.2

Exhibit 22 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	
<i>Reasons it is difficult to eat healthfully¹</i>							
Morning sickness	58.59%	30.00%	31.11%	42.53%	34.29%	32.93%	38.89%
Prefers less-healthy foods	32.03	37.27	31.85	26.44	40.00	31.71	33.01
Food aversions/ changes in appetite	42.97	23.64	18.52	28.74	21.43	20.73	26.63
No money for food	14.06	20.91	33.33	13.79	17.14	20.73	20.75
Less-healthy diet is easier	11.72	22.73	22.22	27.59	21.43	19.51	20.42
No time	10.16	17.27	16.30	21.84	24.29	17.07	16.99
Family doesn't like healthy foods/meals	1.56	12.73	10.37	3.45	11.43	9.76	8.01
Not cooking own meals	7.81	2.73	4.44	6.90	1.43	10.98	5.72
Doesn't like to cook	6.25	6.36	3.70	8.05	8.57	2.44	5.72
Worry/depression	1.56	5.45	8.89	5.75	11.43	1.22	5.56
Eats out a lot	0.00	4.55	4.44	8.05	10.00	3.66	4.58
Doesn't know how	4.69	3.64	6.67	2.30	1.43	3.66	4.08
Chaotic household	0.00	4.55	0.74	2.30	7.14	2.44	2.45
Inadequate cooking facilities	7.03	2.73	0.00	0.00	2.86	0.00	2.29
No transportation	0.78	1.82	3.70	1.15	0.00	0.00	1.47
Other	1.56	4.55	4.44	9.20	10.00	3.66	5.07

¹ Percentages reflect proportion of respondents who found it difficult to eat healthfully.

Vitamin and mineral supplement use. With the exception of Southeastern Site 2, more than one in five women were not taking prenatal vitamins at the time of WIC certification (Exhibit 23). In the Southeastern sites, most of the women who were not taking prenatal vitamins were enrolled in prenatal care (Exhibit 24). The reverse is true for the other four study sites. Neither childbirth history nor prior WIC participation was consistently associated with use of prenatal vitamins.

The proportion of pregnant women not taking separate iron supplements at the time of WIC enrollment was substantially higher than the proportion not taking prenatal vitamins (68 percent overall). Reported use of iron supplements among women in Southeastern Site 1 differed rather dramatically from the other sites. Program staff in the local WIC delivery sites participating in the study were not surprised by this finding. Apparently, the vast majority of immigrant women seen in these delivery sites are found to be anemic when they enroll in prenatal care. Thus, according to local WIC staff, prescriptions for iron supplements are fairly routine. Moreover, women in this site are more likely to take the iron supplement than the regular prenatal vitamin. WIC staff indicated that women generally understand the need to take the iron pill to "strengthen their blood," but are less accepting of the need for the general prenatal vitamin tablet.

Cigarette smoking. Across all sites, 38 percent of women reported smoking cigarettes prior to the current pregnancy (Exhibit 25). This figure is comparable to that reported for pregnant WIC participants in the 1988 National Maternal and Infant Health Survey (NMIHS), a nationally-representative study (Exhibit 26). The mean number of cigarettes smoked per day prior to pregnancy was 15, slightly less than the NMIHS estimate.

Roughly 12 percent of the women who smoked prior to pregnancy indicated that they had given up smoking since they became aware of the current pregnancy, bringing the proportion of women smoking, across all sites, down to 26 percent. This estimate, as well as the estimate of the number of cigarettes currently smoked, is somewhat lower than NMIHS estimates (26 percent versus 29 percent and 8 cigarettes per day versus 13 cigarettes per day, respectively). This difference may be due to sampling differences between the two studies, to a higher degree of underreporting in the WIC Nutrition Education Assessment sample, and/or to a general decrease in smoking during pregnancy since 1988.

Data for Southeastern Site 1 are strikingly different from the other sites. Again, the observed pattern is probably attributable to the large immigrant population in this site. Local WIC staff verified that very few of the immigrant women report smoking, either before or during pregnancy. The same is true of alcohol consumption (discussed below).

Alcohol consumption. In all sites except Southeastern Site 1, 44 percent or more of women reported that they had consumed alcohol prior to pregnancy (Exhibit 27). This figure is substantially higher than the NMIHS estimate of 31 percent (Exhibit 28). Conversely, the proportion of women reporting alcohol consumption since becoming aware of their pregnancy is quite a bit lower than the NMIHS estimate (8 percent versus 14 percent). Women were fairly consistent in answers provided to two different questions about alcohol

Exhibit 23

Vitamin and Mineral Supplement Use

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Frequency for prenatal vitamins</i>							
Every day	68.5%	87.3%	66.8%	73.7%	58.7%	65.0%	70.6%
3 times per week	0.5	2.8	2.8	5.7	0.3	1.0	2.1
Once per week	1.0	0.3	0.3	0.3	1.7	0.7	0.7
Less than once per week	0.0	0.5	0.3	0.0	0.0	0.3	0.2
Don't take prenatal vitamins	30.0	9.3	29.8	20.3	39.3	33.0	26.4
<i>Frequency for iron supplements</i>							
Every day	79.5%	35.8%	12.0%	7.0%	18.7%	15.3%	30.1%
3 times per week	1.0	1.8	0.8	1.0	0.7	1.0	1.0
Once per week	0.5	0.5	0.3	0.0	0.3	0.0	0.3
Less than once per week	0.0	0.3	0.3	0.7	0.0	0.0	0.2
Don't take iron supplements	18.8	61.8	86.8	91.3	80.3	83.7	68.3

Exhibit 24

Prenatal Vitamin Use by Childbirth History, Use of Prenatal Care, and Prior WIC Participation

	Southeast				Mountain Plains				Midwest				All Study Sites	
	Site 1		Site 2		Site 1		Site 2		Site 1		Site 2			
	Prenatal Vitamin Use		Prenatal Vitamin Use		Prenatal Vitamin Use		Prenatal Vitamin Use		Prenatal Vitamin Use		Prenatal Vitamin Use		Prenatal Vitamin Use	
	Yes (n = 280)	No (n = 120)	Yes (n = 363)	No (n = 36)	Yes (n = 281)	No (n = 119)	Yes (n = 239)	No (n = 61)	Yes (n = 182)	No (n = 118)	Yes (n = 195)	No (n = 99)	Yes (n = 1540)	No (n = 553)
<i>Childbirth history</i>														
No previous live births	41.1	42.5	48.8	58.3	58.4	52.9	47.3	55.7	48.9	47.5	52.8	58.6	49.4	51.2
One or more live births	58.9	57.5	51.2	41.7	41.6	47.1	52.7	44.3	51.1	52.5	47.2	41.4	50.6	48.8
<i>Prenatal care</i>														
No prenatal care	1.4	10.8	11.3	13.9	13.5	56.3	9.6	63.9	10.4	51.7	26.2	77.8	11.4	47.4
One or more prenatal visits	98.6	89.2	88.7	86.1	86.5	43.7	90.4	36.1	89.6	48.3	73.8	22.2	88.6	52.6
<i>Previous WIC participation</i>														
Never	64.3	65.8	59.0	77.8	69.4	69.7	51.9	54.1	59.9	60.2	66.2	56.6	61.8	63.3
One or more times	35.7	34.2	41.0	22.2	30.6	30.3	48.1	45.9	40.1	39.8	33.8	43.4	38.2	36.7

Exhibit 25

Cigarette Smoking Prior to and During Pregnancy

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Cigarette use prior to pregnancy¹</i>							
Yes	3.8%	36.0%	49.3%	46.0%	50.0%	52.0%	38.1%
No	96.3	64.0	50.8	54.0	50.0	48.0	61.9
<i>Frequency of cigarette smoking prior to pregnancy</i>							
1 - 5 cigarettes/day	2.3%	8.3%	12.5%	18.7%	11.0%	9.0%	9.9%
6 - 14 cigarettes/day	1.3	8.8	12.3	11.7	16.0	14.7	10.3
15 or more cigarettes/day	0.0	19.0	24.5	15.3	22.3	28.3	17.7
Did not smoke	96.3	64.0	50.8	54.0	50.7	48.0	62.0
Mean (cigarettes/day) ²	4.3	16.4	14.9	11.8	14.2	16.7	14.7
<i>Cigarette use since aware of pregnancy</i>							
Yes	1.0%	21.8%	35.0%	26.1%	35.0%	41.7%	25.7%
No	99.0	78.3	65.0	73.9	65.0	58.3	74.3
<i>Frequency of cigarette smoking since becoming aware of pregnancy</i>							
1 - 5 cigarettes/day	1.0%	8.2%	20.3%	13.7%	16.7%	21.0%	13.0%
6 - 14 cigarettes/day	0.0	7.5	11.0	8.7	10.7	14.3	8.3
15 or more cigarettes/day	0.0	6.0	3.7	3.7	6.3	6.0	4.2
Not reported	0.0	0.0	0.0	0.0	2.9	0.8	0.7
Have not smoked	99.0	78.3	65.0	74.0	65.3	58.3	74.4
Mean (cigarettes/day) ³	2.4	9.9	6.6	6.9	7.6	7.3	7.5

¹ Question asks about cigarette use during three months before respondent found out she was pregnant.

² Means reflect number of cigarettes smoked per day by women who smoked prior to pregnancy.

³ Means reflect number of cigarettes smoked per day by women who have smoked since becoming aware of their pregnancy.

Exhibit 25 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Attempted to stop smoking since becoming aware of pregnancy⁴</i>							
Yes	25.0%	54.0%	50.7%	53.8%	50.0%	44.0%	49.8%
No	75.0	46.0	49.3	46.2	50.0	56.0	50.2
<i>Total number of weeks stopped smoking during pregnancy</i>							
Less than one week	0.0%	23.0%	12.9%	21.8%	23.1%	17.6%	18.8%
One - two weeks	0.0	12.6	16.4	16.7	9.6	12.8	13.6
Two - three weeks	25.0	2.3	4.3	1.3	1.0	3.2	2.8
More than three weeks	0.0	16.1	15.7	11.5	15.4	8.8	13.4
Did not attempt to stop	75.0	46.0	49.3	46.2	50.0	56.0	50.2
Not reported	0.0	0.0	1.4	2.6	1.0	1.6	1.3
Mean (weeks) ⁵	2.1	2.9	4.2	2.6	3.8	2.6	3.3

⁴ Percentages reflect the proportion of sample members who reported smoking since becoming aware of their pregnancy.

⁵ Means are based on sample members who reported a) smoking during pregnancy and b) making at least one attempt to stop smoking since becoming pregnant.

Exhibit 26

Cigarette Smoking Among Sample Members Compared to Data from the 1988 National Maternal and Infant Health Survey (NMIHS)

	Total Sample		NMIHS Sample ¹
	Site 1 (n = 2100)	Excluding Site 1 (n = 1700)	(n = 3868)
Women reporting cigarette smoking prior to pregnancy	38.1%	45.9%	37.2%
Cigarettes smoked per day prior to pregnancy (mean)	14.7	14.9	16.4
Women reporting cigarette smoking since becoming aware of current pregnancy	25.7%	31.4%	29.3%
Cigarettes smoked per day during pregnancy (mean)	7.5	7.7	12.5

¹ Source: Gordon A. and L. Nelson (1995). Characteristics and Outcomes of WIC Participants and Nonparticipants: Analysis of the 1988 National Maternal and Infant Health Survey. Cited data includes only prenatal WIC participants in NMIHS sample.

Exhibit 27

Alcohol Consumption Before and During Pregnancy

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Consumed alcohol prior to pregnancy¹</i>							
No	84.6%	55.8%	40.4%	41.8%	55.1%	55.4%	56.1%
Yes	15.4	44.3	59.6	58.2	44.9	44.6	43.9
<i>Frequency of alcohol consumption prior to pregnancy</i>							
6 or more drinks per week	1.0%	6.3%	6.0%	7.0%	5.5%	3.0%	4.8%
3-5 drinks per week	0.8	4.8	7.8	4.7	5.5	3.4	4.5
1-2 drinks per week	3.0	8.5	10.8	9.7	6.8	5.4	7.4
1-3 drinks per month	7.1	12.8	19.8	21.7	15.1	18.5	15.5
Less than one drink per month	3.5	12.0	15.3	15.1	12.0	14.4	11.8
Did not drink	84.6	55.8	40.4	41.8	55.1	55.4	56.1
<i>Over the past month, how often did you drink beer, wine, or a mixed drink?²</i>							
Never	95.2%	94.0%	86.0%	96.0%	90.3%	92.7%	92.3%
1-2 times per month	1.3	4.3	10.0	3.3	5.7	5.0	5.0
1-2 times per week	1.0	1.3	3.5	0.3	2.3	1.7	1.7
3-6 times per week	1.5	0.3	0.5	0.0	1.7	0.7	0.8
1-2 times per day	1.0	0.3	0.0	0.3	0.0	0.0	0.3
<i>Frequency of alcohol consumption since aware of pregnancy³</i>							
6 or more drinks per week	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
3-5 drinks per week	0.3	0.5	0.0	0.0	0.0	0.3	0.2
1-2 drinks per week	0.8	1.0	3.3	1.0	1.0	1.0	1.4
1-3 drinks per month	1.0	3.0	5.5	2.3	2.7	2.7	2.9
Less than one drink per month	1.5	3.8	7.5	2.7	2.1	3.7	3.6
Does not drink	96.5	91.5	83.8	94.0	94.2	92.3	91.8

¹ Question asks about alcohol consumption during three months before respondent found out she was pregnant.

² Question from food frequency portion of questionnaire: consumption during past month.

³ Alcohol-specific question asked later in survey.

Exhibit 28

Reported Alcohol Consumption Among Sample Members Compared to Data from the 1988 National Maternal and Infant Health Survey (NMIHS)

	Total Sample		NMIHS Sample ¹
	Site 1 (n = 2100)	Excluding Site 1 (n = 1700)	(n = 3868)
Women reporting alcohol consumption prior to pregnancy ²	44.2%	50.3%	31.0%
Women reporting alcohol consumption since becoming aware of current pregnancy	8.1%	9.2%	14.0%

¹ Source: Gordon A. and L. Nelson (1995). Characteristics and Outcomes of WIC Participants and Nonparticipants: Analysis of the 1988 National Maternal and Infant Health Survey. Cited data includes only prenatal WIC participants in NMIHS sample.

² Interval in NMIHS is 12 months before pregnancy. Interval in this study is three months before pregnancy.

consumption (one was included as part of the food frequency and the other was a stand-alone question).

Use of over-the-counter medications. Roughly one-half to two-thirds of women in all sites except Southeastern Site 1 reported use of over-the-counter medications during the current pregnancy (Exhibit 29). Most women consulted their physicians about such medications, however, approximately 10 to 20 percent of women reported they took over-the-counter medications without consulting a physician. Women in Southeastern Site 1 are much less likely to use over-the-counter medications (confirmed with local WIC staff).

Plans for infant feeding. Across all sites, 63 percent of women indicated that they planned to breastfeed, either alone or in combination with formula feeding (Exhibit 30). The intention to breastfeed was highest among women in Southeastern Site 1, (which is consistent with the patterns reported for the largely immigrant population in that site), and lowest among women in Midwestern Site 2.

In all sites, projected breastfeeding rates exceeded expectations based on actual practice among WIC participants nationwide. At a minimum, this indicates that the majority of sample members were favorably inclined toward the option of at least trying breastfeeding before receiving any WIC nutrition education.

Exhibit 31 shows how plans for infant feeding, for the sample as a whole, varied by demographic characteristics, childbirth history, prior WIC participation, and breastfeeding experience/exposure. (Data on breastfeeding experience/exposure are summarized in Exhibit 32.)

Teens, women currently enrolled in school, and women with less than a high school education were less likely to report an intention to breastfeed exclusively than older women, women not enrolled in school, and women with more than a high school education.

Among the women who reported an intention to formula feed exclusively, 40 percent or more in each site did not even consider breastfeeding as an option (Exhibit 33). The principal reasons cited for selecting formula feeding over breastfeeding were simple lack of interest in breastfeeding, the belief that breastfeeding takes more time than formula feeding, a need to return to work or school, and feeling embarrassed about or socially uncomfortable with breastfeeding.

Exhibit 29

Use of Over-the-Counter Medications

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Use of over-the-counter medications during pregnancy</i>							
Yes	16.8%	68.3%	59.0%	58.9%	48.0%	64.0%	51.8%
No	83.3	31.8	41.0	41.1	52.0	36.0	48.2
<i>Frequency with which doctor is consulted re: use of over-the-counter medications</i>							
Always	6.0%	50.1%	30.0%	27.7%	27.3%	44.0%	30.5%
Most of the time	1.5	4.5	3.8	7.0	3.0	1.3	3.5
Sometimes	2.0	2.5	4.0	5.0	1.7	1.7	2.8
Not very often	0.5	1.8	3.3	1.3	2.3	1.7	1.8
Never	6.8	9.3	18.0	17.7	13.7	15.3	13.1
Don't use over-the-counter medications	83.3	31.8	41.0	41.3	52.0	36.0	48.2

Exhibit 30

Plans for Infant Feeding

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Planned method(s) for feeding infant</i>							
Breastfeeding only	14.3%	21.8%	26.3%	25.3%	18.0%	16.0%	20.3%
Breastfeeding plus formula	68.8	33.8	45.3	37.0	37.0	29.3	42.9
Formula only	17.0	44.5	28.5	37.7	45.0	54.7	36.8
<i>Intended breastfeeding duration (months) by planned feeding method</i>							
Breastfeeding only	(n = 57)	(n = 87)	(n = 105)	(n = 76)	(n = 54)	(n = 48)	(n = 427)
1 month or less	7.0%	8.0%	6.7%	7.9%	0.0%	8.3%	6.6%
2-3 months	14.0	14.9	7.6	6.6	18.5	16.7	12.2
4-5 months	8.8	5.7	7.6	15.8	9.3	2.1	8.4
6 months	36.8	33.3	20.0	27.6	37.0	16.7	28.1
7-11 months	10.5	11.5	13.3	10.5	13.0	8.3	11.5
12 months or more	21.1	19.5	27.6	27.6	20.4	20.8	23.4
Don't know	1.8	6.9	17.1	3.9	1.9	27.1	9.8
Mean (months)	6.6	6.9	7.8	7.7	7.6	8.2	7.4
Breastfeeding plus formula	(n = 275)	(n = 135)	(n = 181)	(n = 111)	(n = 111)	(n = 88)	(n = 901)
1 month or less	7.6%	25.9%	17.1%	17.1%	26.1%	20.5%	17.0%
2-3 months	28.7	24.4	22.1	21.6	31.5	28.4	26.2
4-5 months	8.0	5.9	9.4	14.4	12.6	3.4	8.9
6 months	25.5	22.2	19.3	25.2	15.3	26.1	22.5
7-11 months	7.6	3.7	6.6	1.8	7.2	2.3	5.5
12 months or more	14.5	7.4	7.7	9.9	5.4	2.3	9.2
Don't know	8.0	10.4	17.7	9.9	1.8	17.0	10.7
Mean (months)	5.7	4.1	4.8	4.7	3.8	3.7	4.7

Exhibit 31

Plans for Infant Feeding by Demographic Characteristics, Childbirth History, Prior WIC Participation, and Breastfeeding Experience

	Breastfeeding Only	Breastfeeding Plus Formula	Formula Only	Total Sample
	(n = 427)	(n = 901)	(n = 772)	(n = 2100)
Age				
Less than 15 years	6.3%	18.8%	75.0%	100.0%
15-17 years	14.5	42.5	43.0	100.0
18-34 years	21.3	43.2	35.5	100.0
35 or more years	18.8	43.8	37.5	100.0
Employment status				
Currently employed	19.2%	44.7%	36.1%	100.0%
Not employed	20.8	42.1	37.0	100.0
Current schooling				
In school	15.6%	42.9%	41.5%	100.0%
Not in school	21.5	42.9	35.6	100.0
Education				
Did not complete high school	15.2%	43.5%	41.4%	100.0%
Completed high school/GED	21.9	40.5	37.7	100.0
Any college or post-high school	25.3	44.7	30.1	100.0
Number of other live births				
0	19.5%	45.1%	35.3%	100.0%
1 or more	21.1	40.7	38.2	100.0
Prior WIC participation				
Never in WIC	20.6%	45.3%	34.1%	100.0%
One or more times in WIC	20.1	39.0	41.0	100.0

Exhibit 31 (continued)

	Breastfeeding Only	Breastfeeding Plus Formula	Formula Only	Total Sample
	(n = 427)	(n = 901)	(n = 772)	(n = 2100)
<i>Woman was breastfed as an infant</i>				
Yes	28.0%	57.4%	14.5%	100.0%
No	15.7	35.4	48.9	100.0
Don't know	21.4	38.9	39.7	100.0
<i>Woman's siblings were breastfed as infants</i>				
Yes	28.2%	51.8%	20.0%	100.0%
No	14.4	35.6	49.9	100.0
No siblings	21.7	47.8	30.4	100.0
Don't know	17.6	41.4	41.0	100.0
<i>Relative or friends breastfed their infants</i>				
Yes	23.3%	44.8%	31.9%	100.0%
No	12.7	39.0	48.3	100.0
Don't know	14.4	34.6	51.0	100.0
<i>Personally breastfed any previous infant</i>				
Yes	33.0%	51.5%	15.5%	100.0%
No	15.7	39.7	44.6	100.0

Exhibit 32

Breastfeeding Experience/Exposure

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Woman was breastfed as an infant</i>							
Yes	61.0%	14.5%	35.8%	30.7%	26.0%	19.7%	32.1%
No	30.0	71.8	51.8	56.0	62.0	68.7	55.9
Don't know	9.0	13.8	12.5	13.3	12.0	11.7	12.0
<i>Woman's siblings were breastfed as infants</i>							
Yes	61.5%	26.3%	44.3%	39.7%	33.7%	21.7%	38.7%
No	28.5	58.8	40.0	45.7	52.3	62.7	47.2
Don't know	1.5	3.0	5.3	2.3	3.3	4.3	3.3
No siblings	8.5	12.0	10.5	12.3	10.7	11.3	10.8
<i>Relatives or friends breastfed their infants</i>							
Yes	55.3%	70.3%	83.8%	80.0%	71.7%	66.3%	71.0%
No	41.8	24.8	12.8	15.7	21.3	25.7	24.0
Don't know	3.0	5.0	3.5	4.3	7.0	8.0	5.0
<i>Personally breastfed any previous infant</i>							
Yes	36.3%	19.5%	29.0%	29.7%	27.3%	17.7%	26.8%
No	22.0	30.8	14.3	21.3	24.3	26.7	23.1
No other infants	41.8	49.8	56.8	49.0	48.3	55.7	50.1

Exhibit 32 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Duration of prior breastfeeding experience</i>							
	(n = 145)	(n = 78)	(n = 116)	(n = 89)	(n = 82)	(n = 53)	(n = 563)
1 month or less	25.5%	42.3%	34.5%	47.2%	54.9%	52.8%	40.0%
2-3 months	18.6	17.9	19.8	19.1	23.2	15.1	19.2
4-5 months	10.3	5.1	6.0	4.5	3.7	7.5	6.6
6 months	13.8	14.1	11.2	9.0	4.9	5.7	10.5
7-11 months	11.7	11.5	12.1	9.0	3.7	11.3	10.1
12 months or more	19.3	9.0	16.4	11.2	9.8	7.5	13.5
Don't know	0.7	0.0	0.0	0.0	0.0	0.0	0.2
Mean (months)	6.3	4.3	5.3	4.3	3.7	3.6	4.9
<i>Top three reasons for prior breastfeeding choice</i>							
	(n = 145)	(n = 78)	(n = 116)	(n = 89)	(n = 82)	(n = 53)	(n = 563)
Baby will be healthier	89.7%	78.2%	75.0%	80.9%	84.1%	81.1%	82.1%
Strengthens immune system	82.1	46.2	37.1	32.6	36.6	9.4	46.5
Enhances bonding with baby	18.6	33.3	33.6	30.3	37.8	43.4	30.7
More convenient	27.6	28.2	29.3	28.1	25.6	30.2	28.1
Less expensive	6.9	15.4	18.1	13.5	28.0	32.1	16.9
Formula not as nutritious/healthy	8.3	19.2	8.6	3.4	12.2	13.2	10.1
Family encouraged breastfeeding	13.1	6.4	12.1	7.9	7.3	7.5	9.8
Breast milk is easier to digest	20.7	3.8	4.3	4.5	3.7	0.0	8.0
Wanted the experience	0.7	5.1	12.1	14.6	7.3	9.4	7.6
Easier to lose weight/regain shape	2.1	11.5	8.6	11.2	4.9	7.5	7.1
Doctor recommended	0.0	2.6	2.6	1.1	3.7	1.9	1.8
WIC recommended	0.0	2.6	0.0	1.1	0.0	0.0	0.5
Other	3.4	5.1	2.6	3.4	4.9	3.8	3.7

Exhibit 33

Plans for Infant Feeding: Reasons for Planning Formula-Only Feeding¹

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 68)	(n = 178)	(n = 114)	(n = 113)	(n = 135)	(n = 164)	(n = 772)
<i>Considered breastfeeding</i>							
Yes	25.4%	43.3%	56.1%	51.8%	51.1%	50.0%	47.7%
No	74.6	56.7	43.9	48.2	48.9	50.0	52.3
<i>Top three reasons for choosing formula feeding over breastfeeding</i>							
No interest in breastfeeding	47.1%	44.4%	25.4%	41.6%	37.8%	34.8%	38.2%
Breastfeeding takes too much time/formula easier	50.0	30.9	17.5	31.0	28.9	23.8	28.8
Need to return to work/school	33.8	32.6	20.2	31.9	28.9	23.8	28.2
Breastfeeding is embarrassing/ socially uncomfortable	16.2	22.5	22.8	27.4	27.4	29.3	25.0
Breastfeeding is painful	13.2	15.2	17.5	17.7	14.8	11.0	14.8
Health/medical problems preclude breastfeeding	1.5	8.4	18.4	5.3	11.1	10.4	9.7
Worries about breasts/ pumping, etc.	14.7	5.6	7.9	15.9	11.9	5.5	9.3
Breastfeeding restricts lifestyle	5.9	6.7	10.5	15.9	8.9	7.3	9.1
Baby will have health problems	11.8	5.6	9.6	3.5	6.7	3.7	6.2
Father/family can get involved	2.9	4.5	6.1	6.2	7.4	1.8	4.8
Breastfeeding requires restricted diet	2.9	5.1	5.3	0.9	6.7	6.1	4.8
Family/spouse not supportive of breastfeeding	7.4	3.4	7.0	2.7	4.4	4.9	4.7
Negative prior experience with breastfeeding	0.0	3.4	5.3	0.9	2.2	1.8	2.5
Doctor advised against breastfeeding	1.5	2.2	3.5	0.9	2.2	0.6	1.8
Too tired/run down	5.9	1.1	0.9	0.0	3.0	1.2	1.7
Other	2.9	2.8	3.5	1.8	6.6	1.2	3.1
<i>Advised by a doctor or nurse NOT to breastfeed</i>							
Yes	8.8%	2.8%	6.1%	3.6%	3.0%	2.4%	3.9%
No	91.2	97.2	93.9	96.4	97.0	97.6	96.1

¹ Includes only sample members who reported intentions to use *only* formula feeding.

APPENDIX A

BASELINE AND BACKGROUND QUESTIONNAIRE

Start Date: _____ Time: ____:____

MATERNAL BASELINE AND BACKGROUND QUESTIONNAIRE

INTRODUCTION:

As I stated before, my name is _____ and I am with Abt Associates. We are conducting a study on behalf of the Department of Agriculture, Food and Nutrition Services (FNS) about the WIC Program. We are interested in studying the services WIC provides to pregnant women, like yourself. We would like to interview you about your feelings towards the WIC Program and the nutrition education that you will receive. We would also like to collect information from your files at the WIC office, and interview you two more times--about one month before your baby is born and again, four months after your baby is born.

Here is a handout you may keep that explains the types of things we will be talking about today.
[PRESENT HANDOUT]

To thank you for the interview, I have a gift for you.

The information that you provide in this interview is strictly confidential. It will only be used for research purposes. Your participation is completely voluntary. Neither your participation, nor answers will affect your participation in the WIC Program or any other program. Your answers will not be discussed with the WIC staff.

The interview will take a little over thirty-five minutes to complete. As we go through the interview, you may choose not to answer any question. Feel free to ask me questions at any time. Before we begin, would you please read and sign this consent form that states our pledge of confidentiality and gives us your permission to copy information from your WIC record?
[INTERVIEWER: YOU MAY ASK R IF SHE WOULD LIKE FOR YOUR TO READ THE CONSENT FORM ALOUD.]

[AFTER CONSENT FORM IS SIGNED, SAY . . .] We really appreciate your time and help with

BACKGROUND AND PREGNANCY HISTORY:

- A1. The first questions are about you. Please give me the spelling of your first, last and middle name. How do you spell your first name? How do you spell your last name? And your middle name?

FIRST _____

LAST _____

MIDDLE NAME _____

A2. Please tell me your date of birth.

|_____| |_____| |_____|
MONTH DAY YEAR

A3. When is your baby due?

[INTERVIEWER: IF R DOES NOT KNOW DAY, ENTER 15. YOU MUST OBTAIN MONTH AND YEAR! IF YOU CANNOT OBTAIN MONTH AND YEAR, GOTO END2. YOU CANNOT CONTINUE THIS INTERVIEW.]

|_____| |_____| |_____|
MONTH DAY YEAR

A4. Where do you plan to deliver your baby?

HOSPITAL NAME: _____

REF 7
DK 8

A5. Have you seen a doctor, nurse or nurse midwife about this pregnancy?

YES 1
NO 2 ➡ (GO TO A6)
REF 7 ➡ (GO TO A6)

A5.a How many times have you seen a doctor, nurse or nurse midwife about this pregnancy?

[INTERVIEWER: IF NECESSARY USE CALENDAR TO HELP GUIDE NUMBER OF TIMES, BUT DO NOT "SUGGEST" NUMBER. REF = 97, DK = 98]

|_____| |_____| # OF TIMES

A5.b Approximately when was the first time you saw a doctor, nurse or nurse midwife about this pregnancy?

[INTERVIEWER: IF R DOES NOT KNOW DAY, ENTER 15. PROBE FOR MONTH AND YEAR]

|_____| |_____| |_____|
MONTH DAY YEAR

A6. Is this your first pregnancy?

YES	1	➡ (GO TO A7)
NO	2	
REF	7	
DK	8	

A6.a How many children have you had?

[INTERVIEWER: THIS NUMBER DOES NOT INCLUDE MISCARRIAGES OR ABORTIONS, NOR DOES IT INCLUDE ADOPTED OR FOSTER CHILDREN.]

0	00
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
MORE THAN 8	09
REF	97
DK	98

A7. Next, I would like to ask a few questions about the people who live with you. How many adults live with you now, not including yourself?

[INTERVIEWER: THIS **DOES NOT** INCLUDE ADULTS WHO TEMPORARILY "STAY" AT HOUSE OVER NIGHT, EVEN ON A REGULAR BASIS. ADULTS ARE 18 YEARS AND OLDER. IF R LIVES IN SHELTER ENTER <95>. IF R IS HOMELESS, ENTER <96> REF = <97>, DK = <98>]

| _____ | _____ | # of ADULTS

A8. How many children live with you now?

[INTERVIEWER: THIS DOES NOT INCLUDE CHILDREN WHO TEMPORARILY "STAY" AT HOUSE OVER NIGHT, EVEN ON A REGULAR BASIS. CHILDREN ARE 17 YEARS AND YOUNGER REF = 97, DK = 98.]

| _____ | _____ | # of CHILDREN

[SHOWCARD]

A9. Currently, are you, single and never been married, married or living with a partner, divorced, separated or widowed?

SINGLE, NEVER BEEN MARRIED	1
MARRIED/LIVING WITH A PARTNER	2
DIVORCED	3
LEGALLY SEPARATED	4
WIDOWED	5
REF	7
DK	8

A10. Next, I would like to ask you some questions about your sources of income. Are you currently working at a job for pay?

[IF R STATES SHE HAS MORE THAN ONE JOB USE THE TERM "these jobs". DO NOT PROBE FOR THIS INFORMATION.]

YES	1	
NO	2	☛ (GO TO A11)
REF	7	☛ (GO TO A11)

A10.a On average, how many hours a week do you work at (this job/these jobs)?

[INTERVIEWER: IF R HAS MORE THAN ONE JOB, THIS IS TOTAL NUMBER OF HOURS WORKED FOR ALL JOBS. REF = 97, DK = 98]

| _____ | _____ | HOURS

A11. Are you or anyone in your household currently receiving AFDC, welfare, general assistance or general relief?

[INTERVIEWER: HOUSEHOLD INCLUDES: A7 # of ADULTS AND A8 # of CHILDREN.]

YES.	1
NO	2
REF	7
DK	8

A12. Are you or anyone in your household currently receiving food stamps?

[INTERVIEWER: HOUSEHOLD INCLUDES: A7 # of ADULTS AND A8 # of CHILDREN.]

YES	1
NO	2
REF	7
DK	8

[SHOWCARD]

A13 Now I would like to ask you about your household's total income for last month, this would be (MONTH). This includes income for all people in your home including you. If you or someone in your household had a job, I would like you to include those earnings BEFORE taxes and other deductions were taken out. We're asking about gross pay, NOT, take-home pay. Please consider all sources of income, including jobs, social security, supplemental security, AFDC, food stamps, Unemployment Insurance, alimony, child support, etc. Tell me the number that is closest to your household's total income for (MONTH).

[INTERVIEWER: THIS IS INCOME BEFORE TAXES AND BEFORE ANY OTHER DEDUCTIONS. HOUSEHOLD INCLUDES: A7 # ADULTS, A8 # CHILDREN. IF NECESSARY, INTERVIEWER READ: "Your answers to this question will in no way affect your eligibility for WIC. The WIC staff will never see your answers to this question or any other question."]

Less than \$250	01
\$ 251 - \$ 500	02
\$ 501 - \$ 750	03
\$ 751 - \$ 1,000	04
\$ 1,001 - \$ 1,250	05
\$ 1,251 - \$ 1,600	06
\$ 1,601 - \$ 2,500	07
\$ 2,501 - \$ 3,500	08
\$ 3,501 - \$ 5,000	09
Over \$ 5,000	10
REF	97
DK	98

A14. Next we would like to know about your experiences with school. Are you enrolled in school now?
[INTERVIEWER, PROBE TO SEE IF ON VACATION OR BREAK FROM SCHOOL].

YES	1
NO	2
REF	7
DK	8

A14.a What is the last grade in school or college that you have completed?
[INTERVIEWER: PROBE TO DETERMINE THE HIGHEST LEVEL ATTAINED.]

NO FORMAL SCHOOLING	01
LESS THAN 8TH GRADE	07
COMPLETED 8TH GRADE	08
SOME HIGH SCHOOL	10
COMPLETED HIGH SCHOOL OR GED	12
SOME COLLEGE OR SCHOOL AFTER HIGH SCHOOL	13
COMPLETED ASSOCIATE DEGREE, JUNIOR COLLEGE OR VOCATIONAL/TECHNICAL Program	14
COMPLETED BACHELOR'S DEGREE	16
ADVANCED DEGREE (MA, MBA, JD, PHD, MD)	17
OTHER (Please Specify)	18
REF	97
DK	98

PAST EXPERIENCES WITH WIC PROGRAM:

B1. Next, I would like to ask you about your past experiences with the WIC Program. How many times have you, personally, gotten on WIC while you were pregnant; never, once or more than once?

NEVER	0
ONCE	1
MORE THAN ONCE	2
REF	7
DK	8

[IF RESPONDENT HAS GIVEN BIRTH TO CHILDREN ASK B2]

B2. Are any of your children who are living with you now on WIC?
[INTERVIEWER: THIS INCLUDES ONLY CHILDREN WHO ARE CURRENTLY LIVING WITH R AND WERE COUNTED IN A8.]

YES	1	
NO	2	➡ (GO TO B2.b)
REF	7	➡ (GO TO B2.b)
DK	8	➡ (GO TO B2.b)

B2.a How many of your children are on WIC now?

[INTERVIEWER: THIS IS ONLY CHILDREN WHO LIVE WITH R AND WERE COUNTED IN A8.]

ONE	1
TWO	2
THREE	3
FOUR	4
FIVE	5
MORE THAN FIVE	6
REF	7
DK	8

[GO TO C1]

B2.b Have any of your children ever been certified for WIC before?

[INTERVIEWER: PROBE IF NEEDED, CHILDREN DO NOT NECESSARILY HAVE TO LIVE WITH R NOW, BUT SHOULD HAVE LIVED WITH R WHILE RECEIVING WIC BENEFITS.]

YES	1
NO	2
REF	7
DK	8

BEHAVIOR

[SHOWCARD]

- C1. Next, I'd like to ask you a few questions about the foods you eat. I'm going to ask you how often you eat certain foods. When answering think about your *usual* diet **over the past four weeks**. For each food I mention, please tell me whether you ate it once or twice during the past four weeks, once or twice a week, three times a week, once a day, two times a day or three or more times a day. If you never ate or drank a food I mention, just tell me. Here is a showcard with the number of times listed. What about _____? How often did you eat/drink _____ in the last four weeks? Compared to before you were pregnant, are you eating more, less or the same amount?

[PROBE FOR PER DAY, PER WEEK.] [INTERVIEWER: IT IS VITAL THAT WE OBTAIN ACCURATE DATA FOR THIS QUESTION. DO NOT "RUSH" THIS QUESTION. PROBE FOR PER DAY, PER WEEK.]

Food Item/ Food Group	Never (0 x's)	1-2 x's	1-2 x's a week	3 x's a week or more (not everyday)	1 x a day	2 x's a day	3 or more x's a day	Compared to before you were pregnant, are you eating more, less or the same amount?	REF	DK
Milk	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Cheese	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Eggs	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Tuna fish	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Beef, pork, veal, chicken, or fish that is not fried This does not include tuna fish.	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Fried foods such as fried chicken, fish, pork, or french fries	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Peanut butter	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
100% Fruit juice (not including Kool-aid or fruit drinks)	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Regular (not diet) soda or pop, Kool-aid, Hawaiian Punch or other fruit drinks that are not 100% fruit juice	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Fruit, fresh, frozen or canned	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Vegetables, excluding beans, peas or lentils. They can be fresh, frozen or canned.	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8

Food Item/ Food Group	Never (0 ×s)	1-2 ×s	1-2 ×s a week	3×s a week or more (not everyday)	1× a day	2 ×s a day	3 or more ×s a day	Compared to before you were pregnant, are you eating more, less or the same amount?	REF	DK
Beans or peas (such as pinto, kidney, black-eye, white, etc) or lentils These can be fresh, frozen, canned or dried.	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Any of the following breakfast cereals (read list of WIC cereals) This would be both hot and ready-to-eat cereals.	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Cookies, cakes, or pastries	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Candy of any type	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Snacks such as chips, pretzels, packaged popcorn	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8
Beer, wine or mixed drink	0	1	2	3	4	5	6	M/ L/ S/ REF/ DK	7	8

- C2. Sometimes when women become pregnant, they change their eating habits. Next, I'd like to talk about whether your eating habits have changed since you've become pregnant. Would you say that your overall appetite has remained the same, increased, or decreased since you became pregnant?
[INTERVIEWER: THIS IS SINCE SHE **FOUND OUT** SHE WAS PREGNANT. APPETITE IS DEFINED AS HOW MUCH SHE **DESIRES TO EAT** NOT HOW MUCH SHE ACTUALLY CONSUMES.]

REMAINED THE SAME	1
INCREASED	2
DECREASED	3
REF	7
DK	8

- C3. Now, I'd like to know if there have been any other changes in your eating since you knew that you were pregnant. Do you eat foods now that you didn't like before you were pregnant?
[INTERVIEWER: THIS DOES NOT INCLUDE FOOD THAT R EATS BECAUSE SHE THINKS SHE IS "SUPPOSED TO EAT BECAUSE SHE IS PREGNANT."]

YES	1
NO	2
REF	7
DK	8

- C4. Have you stopped eating any foods because you don't like them now that you are pregnant?
[INTERVIEWER: THIS DOES NOT INCLUDE FOOD THAT R DOES NOT EAT BECAUSE SHE KNOWS THAT THEY ARE NOT GOOD FOR HER. THIS DOES INCLUDE CHANGES IN APPETITE AND FOOD AVERSIONS.]

YES	1
NO	2
REF	7
DK	8

- C5. Are you taking any special iron pills for this pregnancy? This would be an iron only pill.
[INTERVIEWER: WE ARE REFERRING TO A PILL SPECIFICALLY FOR **IRON ONLY**, NOT A PILL THAT CONTAINS BOTH VITAMINS AND IRON.]

YES	1	
NO	2	☛ (GO TO C6)
REF	7	☛ (GO TO C6)
DK	8	☛ (GO TO C6)

C5.a How often do you usually take these iron pills for this pregnancy? Do you take them every day, about three times a week, once a week or less than once a week?

EVERY DAY	1
3 TIMES A WEEK	2
ONCE A WEEK	3
LESS THAN ONCE A WEEK	4
REF	7
DK	8

C6. Are you taking any special vitamin pills for this pregnancy?

[INTERVIEWER: "SPECIAL" MEANS THAT R WAS NOT TAKING IT BEFORE SHE BECAME PREGNANT. THESE PILLS MAY OR MAY NOT INCLUDE IRON AND MAY OR MAY NOT BE PRESCRIBED BY A DOCTOR. PILLS ARE AKA "PRENATAL VITAMIN PILLS."]

YES	1	
NO	2	☞ (GO TO D1)
REF	7	☞ (GO TO D1)
DK	8	☞ (GO TO D1)

C6.a How often do you usually take these pills for this pregnancy? Do you take them every day, about three times a week, once a week or less than once a week?

EVERY DAY	1
3 TIMES A WEEK	2
ONCE A WEEK	3
LESS THAN ONCE A WEEK	4
REF	7
DK	8

KNOWLEDGE

One of the most important goals of the WIC Program is to provide you with information about healthy eating habits for pregnancy. The next few questions are about your thoughts and opinions about eating during pregnancy. Please do not be concerned if you do not think you know the answers to some of these questions, you will learn about these issues at WIC.

D1. First, we would like to get an idea about how much you feel you already know about healthy eating habits for pregnancy. Would you say that you already know almost nothing, a little, some or a lot?

ALMOST NOTHING	1
A LITTLE	2
SOME	3
A LOT	4
REF	7
DK	8

D2. Have you learned about healthy eating habits during pregnancy from any of the following?

	YES	NO	DK	NA
A doctor?	1	2	8	9
A nurse or midwife?	1	2	8	9
A health clinic?	1	2	8	9
Food stamp program?	1	2	8	9
Head Start?	1	2	8	9
Other programs you are in because you are pregnant?	1	2	8	9
School?	1	2	8	9
Church?	1	2	8	9
Any place else that I have not mentioned? (Specify)	1	2	8	9

D3. Have you gotten information about healthy eating during pregnancy on your own, for example, from...

	YES	NO	REF	DK
A book that you read?	1	2	7	8
A magazine or newspaper article that you read?	1	2	7	8
A TV show or video you watched?	1	2	7	8
A special class or lecture you attended?	1	2	7	8
Or some other place I have not mentioned? (Specify)	1	2	7	8

D4. Next, I am going to read you a set of statements. We are interested in your opinion. Some of the statements are true and some are false. After I read each statement, please tell me whether you think the statement is true or false.

[INTERVIEWER: YOU CAN ONLY DEFINE THE TERMS IN THE INTERVIEWER INSTRUCTIONS, OTHERWISE ASK FOR BEST GUESS.]

	T	F	REF	DK
What you eat has nothing to do with whether you have anemia or low iron.	1	2	7	8
You should follow a strict schedule for feeding the baby when breastfeeding.	1	2	7	8
Alcohol, caffeine, and nicotine can pass from your blood into your breast milk and affect your baby.	1	2	7	8
It is ok for babies to drink regular or low-fat milk after the age of six months.	1	2	7	8
Breastfeeding for even one week is better for your baby than not breastfeeding at all.	1	2	7	8
Bread is a good source of vitamin C.	1	2	7	8
Breast milk can help protect babies from certain illnesses.	1	2	7	8
It is ok for babies to begin to eat solid foods, including cereal, at two months of age. This would include cereal in a bottle.	1	2	7	8
It is okay to lay a baby down with a bottle, as long as the bottle has milk or formula in it and not juice or soda. [INTERVIEWER: ALL INSTANCES OF BABY SLEEPING WITH A BOTTLE ARE INCLUDED, SUCH AS, NAPS IN A STROLLER OR PLAYPEN OR CAR SEAT, AS WELL AS NIGHTTIME SLEEPING IN CRIB.]	1	2	7	8
The food a woman eats during pregnancy can affect how healthy her new baby will be.	1	2	7	8
Breastfeeding mothers have to follow a special diet.	1	2	7	8
It is okay for a pregnant woman to take medicine without talking to a doctor as long as it is not a prescription drug. (FOR EXAMPLE, COUGH SYRUP, ASPIRIN)	1	2	7	8
Eating many small meals each day is better for your health than eating just one or two large meals.	1	2	7	8
If a woman is overweight, she should try to lose weight during pregnancy.	1	2	7	8
Giving a baby solid food helps him/her sleep through the night.	1	2	7	8
A mother who smokes only a few cigarettes a day throughout her pregnancy may harm her developing baby.	1	2	7	8
A baby should eat as many different types of food as soon as possible.	1	2	7	8
It is not safe to drink even one alcoholic drink (that is beer, wine, or liquor) while pregnant.	1	2	7	8

D5. Which of the following foods is the best source of iron?

- Broccoli 1
- Orange juice 2
- Pinto Beans 3
- Cheese 4
- REF 7
- DK 8

D6. Which of the following foods has the most calcium?

Tomatoes	1
Milk	2
Chicken	3
Whole wheat bread	4
REF	7
DK	8

D7. Which of the following foods is the best source of folic acid?

Spinach	1
Milk	2
Chicken	3
Grapefruit juice	4
REF	7
DK	8

ATTITUDES

E1. In general, would you say your health is excellent, very good, good, fair or poor?

EXCELLENT	1
VERY GOOD	2
GOOD	3
FAIR	4
POOR	5
REF	7
DK	8

E2. How healthy do you think your eating habits are? Are your eating habits very healthy, somewhat healthy, somewhat unhealthy or very unhealthy?

VERY HEALTHY	1
SOMEWHAT HEALTHY	2
SOMEWHAT UNHEALTHY	3
VERY UNHEALTHY	4
REF	7
DK	8

E3. Considering how far along you are in this pregnancy, how do you feel about the weight you have gained? Would you say you have gained too much, gained too little, gained the right amount or have you lost weight?

GAINED TOO MUCH	1
GAINED TOO LITTLE	2
GAINED THE RIGHT AMOUNT	3
LOST WEIGHT	4
REF	7
DK	8

[SHOWCARD]

- E4. Next, I am going to read a list of statements aloud and would like to know whether you agree or disagree with each statement. Please tell me whether you strongly agree, agree, disagree or strongly disagree with the following statements.

	Strongly Agree	Agree	Disagree	Strongly Disagree	REF	DK
If I take a vitamin pill in the morning, I don't have to worry about what I eat.	1	2	3	4	7	8
The food I eat has nothing to do with how well I feel.	1	2	3	4	7	8
My health depends on how well I take care of myself.	1	2	3	4	7	8
I've been eating the same way for years and, at this point, it would be very difficult for me to change.	1	2	3	4	7	8
Healthy eating is a matter of common sense.	1	2	3	4	7	8
I feel best physically when I eat nutritious foods.	1	2	3	4	7	8
If I do not eat well my health will suffer.	1	2	3	4	7	8
Sometimes I eat foods that I like but I know they aren't good for me.	1	2	3	4	7	8
Sometimes I eat what everybody else is eating even if I know it is not good for me.	1	2	3	4	7	8

[SHOWCARD]

- E5. Certain situations make it hard to eat healthy. For each situation, please tell me whether you are definitely able to eat healthy, probably able to eat healthy, maybe, probably not or definitely not able to eat healthy. Here is a showcard with the response options listed. Are you able to eat healthy when...

[INTERVIEWER: "DEFINITELY YES" MEANS THAT R WOULD DEFINITELY BE ABLE TO EAT HEALTHY WHEN SHE IS EATING OUT. TO HAVE "CRAVINGS" IS DEFINED AS "WHEN YOU REALLY WANT TO EAT A CERTAIN FOOD VERY, VERY MUCH; YOU CAN'T RESIST EATING THAT FOOD; YOU FEEL LIKE YOU MUST EAT IT; YOU HAVE TO HAVE IT".]

	Definitely Yes	Probably Yes	Maybe	Probably No	Definitely No	REF/NA	DK
You are eating out?	1	2	3	4	5	7	8
You have no time to plan and prepare meals?	1	2	3	4	5	7	8
You are feeling stressed?	1	2	3	4	5	7	8
You are bored?	1	2	3	4	5	7	8
You have not eaten all day and are starving?	1	2	3	4	5	7	8
Someone else prepares your meals?	1	2	3	4	5	7	8
There are a lot of non-nutritious foods in the house?	1	2	3	4	5	7	8
You have strong cravings for certain foods?	1	2	3	4	5	7	8

E6. Have you found it difficult to eat healthy during this pregnancy?

YES	1	
NO	2	☛(GO TO E7)
REF	7	☛(GO TO E7)

E6.a I would like to know the three main reasons it has been difficult for you to eat healthy during this pregnancy. What is the first reason? The second reason? The third reason?

[INTERVIEWER: CODE 98 FOR REMAINING BLANK ANSWERS]

REASON #1:			CODE
REASON #2:			CODE
REASON #3:			CODE

TIME CONSTRAINTS:

NO TIME TO MAKE MEALS	01
POOR COOKING FACILITIES	02
NO COOKING FACILITIES	03

FAMILY/LIVING CONSTRAINTS:

COOKING MEALS FOR LARGE FAMILY	04
FAMILY DOESN'T EAT HEALTHY	05
SOMEONE ELSE PREPARES MEALS	06
NOT LIVING IN OWN HOME	07
OTHER HOUSEHOLD CHORES	08
HOUSEHOLD IS CHAOTIC	09
NO MONEY FOR FOOD	10

PERSONAL CONSTRAINTS:

NO LIKE COOKING/SHOPPING	11
DOESN'T KNOW HOW TO COOK	12
EATS OUT A LOT	13
LACKS TRANSPORT/STORE FAR AWAY	14
DOESN'T CARE ABOUT EATING HEALTHY	15
CRAVES JUNK FOOD	16
HEALTHY FOOD DOESN'T TASTE GOOD	17
NO KNOW WHAT "HEALTHY EATING" MEANS	18
TOO EASY TO EAT UNHEALTHY	19
HABIT EATING UNHEALTHY FOODS	20
MORNING SICKNESS	21
HAVE BEEN SICK LATELY	22
FOOD AVERSIONS/CHANGES IN APPETITE	23
OTHER (Specify)	24

REF	97
DK	98

E7. Of all the vegetables you have ever eaten, which is the one you dislike most?

ASPARAGUS	01
BEANS (ANY KIND)	02
BEETS	03
BROCCOLI	04
BRUSSEL SPROUTS	05
CABBAGE	06
CARROTS	07
CAULIFLOWER	08
CORN	09
LEEKs	10
LETTUCE (ANY KIND)	11
MUSHROOMS	12
OKRA	13
OLIVES	14
PEAS (ANY KIND)	15
PEPPERS (ANY KIND)	16
SPINACH	17
SPROUTS	18
SQUASH (ANY KIND)	19
TOMATOES	20
ZUCCHINI	21
OTHER (Specify)	22
<hr/>	
REF	97
DK	98

ALCOHOL

[SHOWCARD]

F1. Please look at this card and tell me, on average, about how many alcoholic drinks you had each week during the three months before you knew that you were pregnant?
[INTERVIEWER: IF NECESSARY, USE CALENDAR TO SHOW TIME FRAME.]

More than 8 drinks a week	01
6-8 drinks a week	02
3-5 drinks a week	03
2 drinks a week	04
1 drink a week	05
2-3 drinks a month	06
1 drink a month	07
Less than one drink a month	08
None	09
REF	97
DK	98

[SHOWCARD]

F2. Now please look at this card and tell me, about how many alcoholic drinks have you had each week since you knew that you were pregnant?

More than 8 drinks a week	01
6-8 drinks a week	02
3-5 drinks a week	03
2 drinks a week	04
1 drink a week	05
2-3 drinks a month	06
1 drink a month	07
Less than one drink a month	08
None	09
REF	97
DK	98

CIGARETTES

F3. During the three months before you knew that you were pregnant, did you smoke cigarettes at all?

[INTERVIEWER: IF NECESSARY, USE CALENDAR TO SHOW TIME FRAME.]

YES	1	
NO	2	➡ (GO TO F4)
REF	7	➡ (GO TO F4)
DK	8	➡ (GO TO F4)

F3.a On the average, before you knew that you were pregnant, about how many cigarettes did you smoke per day, per week or per month?

[INTERVIEWER: IF ON-AGAIN, OFF-AGAIN SMOKER, PROBE FOR OVERALL AVERAGE.]

| ____ | ____ | # OF CIGARETTES

DAY	01
WEEK	02
MONTH	03
REF	97
DK	98

F4. Since you have known that you were pregnant, have you smoked cigarettes at all?

YES	1	
NO	2	➡ (GO TO F6)
REF	7	➡ (GO TO F6)
DK	8	➡ (GO TO F6)

F4.a On the average, since you have known that you were pregnant, about how many cigarettes have you smoked per day, per week or per month?

[INTERVIEWER: IF ON-AGAIN, OFF-AGAIN SMOKER, PROBE FOR OVERALL AVERAGE.]

|_____|_____| # OF CIGARETTES

DAY	01
WEEK	02
MONTH	03
REF	97
DK	98

F5. During this pregnancy, have you **stopped** smoking cigarettes for any period of time?

YES	1	
NO	2	☛ (GO TO F6)
REF	7	☛ (GO TO F6)
DK	8	☛ (GO TO F6)

F5.a For how many days, weeks or months, during this pregnancy, have you stopped smoking cigarettes?
[INTERVIEWER: THIS IS **TOTAL NUMBER** OF DAYS, WEEKS OR MONTHS. IF R IS ON-AGAIN, OFF-AGAIN SMOKER, ASK FOR TOTAL NUMBER.]

|_____|_____| # OF ...

DAYS	01
WEEKS	02
MONTHS	03
REF	97
DK	98

DRUGS

F6. Since you have known that you were pregnant, have you used any over-the-counter medication such as Tylenol, aspirin, cold or allergy medication?

YES	1	
NO	2	☛ (GO TO G1)
REF	7	☛ (GO TO G1)
DK	8	☛ (GO TO G1)

F6.a How often did you ask your doctor about these medications before taking them? Did you ask him/her always, most of the time, sometimes, not very often or never?

ALWAYS	1
MOST OF THE TIME	2
SOMETIMES	3
NOT VERY OFTEN	4
NEVER	5
REF	7
DK	8

INFANT FEEDING ISSUES:

G1. Now I'd like to ask you some questions about how you plan on feeding your baby. Did your mother breastfeed you?

YES	1
NO	2
REF	7
DK	8

G2. Did your mother breastfeed any of your brothers or sisters?

YES	1
NO	2
NO SIBLINGS	3
REF	7
DK	8

G3. Have any of your relatives or friends ever breastfed a baby?

YES	1
NO	2
REF	7
DK	8

[IF RESPONDENT HAS GIVEN BIRTH TO CHILDREN, ASK G4. IF WOMAN HAS NO CHILDREN GO TO G7.]

G4. Have you ever breastfed any of your children, even for a short time?

YES	1	
NO	2	➡ (GO TO G7)
REF	7	➡ (GO TO G7)
DK	8	➡ (GO TO G7)

G5. For how long did you breastfeed?

| _____ | _____ | NUMBER OF ...

DAYS	1
WEEKS	2
MONTHS	3
REF	7
DK	8

G6. Next, I would like to know the top three reasons why you breastfed. What is the first reason? The second reason? The third reason?

[INTERVIEWER: CODE <98> FOR REMAINING ANSWERS]

REASON #1:	_____	_____	CODE
REASON #2:	_____	_____	CODE
REASON #3:	_____	_____	CODE

BABY'S HEALTH

STRENGTHENS BABY'S IMMUNE SYSTEM	01
BABY IS HEALTHIER	02

EATING PREFERENCES



BREASTFED BABIES SPIT UP LESS	03
FORMULA NOT AS GOOD FOR THE BABY	04
EASIER TO DIGEST	05
CHEAPER THAN FORMULA	06
MORE CONVENIENT	07

MOTHER

BONDING WITH BABY	08
LOSE WEIGHT MORE QUICKLY	09
UTERUS IS NORMAL SIZE QUICKER	10
REDUCES MY BLEEDING AFTER DELIVERY	11
FAMILY/HUSBAND ENCOURAGED ME	12
OTHER (Specify)	13

REF	97
DK	98

G7. How are you planning to feed this baby? Are you planning to breastfeed only, breastfeed and formula feed or formula feed only? [INTERVIEWER: IF WOMAN RESPONDS THAT SHE IS UNDECIDED, ATTEMPT TO FORCE A CHOICE BY ASKING, "If you **had** to choose today, what would your choice be?]

BREASTFEED ONLY	1	 (GO TO G10)
FORMULA AND BREASTFEEDING .	2	 (GO TO G10)
FORMULA FEEDING ONLY	3	

G8. In making this decision, did you **consider** breastfeeding your baby?

YES	1
NO	2
REF	7

G8.a [IF "YES" TO G8, ASK, "Now I would like to know the top three reasons why you are choosing to formula-feed your baby rather than breastfeed your baby? IF "NO" TO G8, ASK "Now I would like to know the top three reasons why you did not consider breastfeeding your baby?"] What is the first reason? The second reason? The third reason?
 [INTERVIEWER: CODE <98> FOR REMAINING ANSWERS]

REASON #1:			CODE
REASON #2:			CODE
REASON #3:			CODE

TIME/SUPPORT CONSTRAINTS

RETURN TO WORK/SCHOOL	01
OTHER FAMILY RESPONSIBILITIES	02
LACK SUPPORT OF FAMILY/SPOUSE	03
FATHER/FAMILY CAN NOT HELP	04
WILL TAKE TOO MUCH TIME	05
NO PERSONAL TIME	06
TOO TIRED, RUN DOWN	07
RESTRICT LIFESTYLE,	08
JUST NOT PRACTICAL	09
NOT POSSIBLE IN PUBLIC PLACES	10

PERSONAL EMOTIONAL REASONS

NO INTEREST	11
RESTRICTS TYPES OF CLOTHING	12
CAN NOT EAT THE FOODS I LIKE	13
EMBARRASSING	14
FEEL SOCIALLY UNCOMFORTABLE	15
I JUST DON'T WANT TO	16

PERSONAL PHYSICAL REASONS

BREASTS ARE TOO SMALL	17
NO HOW TO BREASTFEED CORRECTLY	18
NO HOW TO USE A BREAST PUMP	19
TROUBLE EXPRESSING MILK	20
LEAKING	21
DISFIGURE MY BREASTS	22
PAINFUL	23
ADVISED BY DOCTOR	24

BABY

BABY WILL HAVE HEALTH PROBLEMS	25
DON'T KNOW HOW TO HOLD BABY	26
TROUBLE SUCKING	27
BABY WILL BE FUSSY	28
BABY WILL NOT GET ENOUGH MILK	29
BABY WON'T WANT BREAST	30
EASIER TO FEED BABY WITH BOTTLE	31
OTHER (Specify)	32

REF	97
DK	98

G9. Has a doctor or nurse advised you not to breastfeed?

YES 1
NO 2
REF 7

[GO TO G11]

G10. How long do you plan to breastfeed?

| _____ | _____ | NUMBER OF ...

DAYS 01
WEEKS 02
MONTHS 03
REF 97
DK 98

G11. Sometimes, people in your life can make it difficult for you to do the things you are trying to do. I'd like to know if there is anyone in your life who has or who might make it difficult for you to ...

[INTERVIEWER: IF R DRINKS ALCOHOL (F1 OR F2) ASK "Cut down or quit drinking alcohol." IF R SMOKES (F3 OR F4) ASK "Cut down or quit smoking". OTHERWISE ASK ONLY A,B,C AND GOTO G12.]

	YES	NO	REF	DK
A. Eat well during pregnancy?	1	2	7	8
B. Formula feed your baby?	1	2	7	8
C. Breastfeed your baby?	1	2	7	8
D. Cut down or quit drinking alcohol?	1	2	7	8
E. Cut down or quit smoking?	1	2	7	8

[SHOWCARD]

G12. How strongly do you agree or disagree with the following statements? Please tell me whether you strongly agree, agree, somewhat agree, somewhat disagree, disagree or strongly disagree.

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree	REF	DK
Bottle feeding increases the chances that baby will have colic.	1	2	3	4	5	6	7	8
Breastfeeding is a very convenient method of feeding baby.	1	2	3	4	5	6	7	8
Breastfeeding helps protect baby against infection.	1	2	3	4	5	6	7	8
Breastfeeding helps mother feel closer to baby.	1	2	3	4	5	6	7	8
Breastfeeding helps mother lose weight.	1	2	3	4	5	6	7	8
Bottle feeding provides incomplete nourishment for baby (baby does not get all he really needs).	1	2	3	4	5	6	7	8
Bottle feeding makes it easier for father or other family members to be involved in feeding baby.	1	2	3	4	5	6	7	8
Breastfeeding is embarrassing for the mother.	1	2	3	4	5	6	7	8
Breastfeeding makes it difficult for mother to go out.	1	2	3	4	5	6	7	8
It is difficult to breastfeed successfully.	1	2	3	4	5	6	7	8
Bottle feeding makes it easier for mother to go to work or school.	1	2	3	4	5	6	7	8
Breast milk is the best nourishment for baby.	1	2	3	4	5	6	7	8
Bottle feeding is an expensive method of feeding.	1	2	3	4	5	6	7	8
Bottle feeding is a trouble free method of feeding.	1	2	3	4	5	6	7	8
Bottle feeding allows one to see exactly how much milk baby has had.	1	2	3	4	5	6	7	8
Breastfeeding requires mother to watch what she eats and drinks.	1	2	3	4	5	6	7	8

[SHOWCARD]

G13. We all consider different factors when making decisions. I'm going to read you a list of factors women often think about when making their decision how to feed their babies. For each item I mention, please tell me how important the item is in your decision on how to feed your baby. The response categories are extremely important, very important, somewhat important, somewhat unimportant, not very important, not important at all. How important is it that the feeding method you choose...

	Extremely Important	Very Important	Somewhat Important	Somewhat Unimportant	Not Very Important	Not Important at all	REF	DK
Is convenient?	1	2	3	4	5	6	7	8
Helps protect baby against infection?	1	2	3	4	5	6	7	8
Helps you feel closer to baby?	1	2	3	4	5	6	7	8
Helps you lose weight?	1	2	3	4	5	6	7	8
Provides complete nourishment for baby?	1	2	3	4	5	6	7	8
Allows baby's father or other family member to be involved in feeding baby?	1	2	3	4	5	6	7	8
Does not make you feel embarrassed?	1	2	3	4	5	6	7	8
Allows you to go out socially?	1	2	3	4	5	6	7	8
Makes it easy for your go to work or school?	1	2	3	4	5	6	7	8
Is trouble-free?	1	2	3	4	5	6	7	8
Is inexpensive?	1	2	3	4	5	6	7	8
Allows you to see exactly how much milk baby has had?	1	2	3	4	5	6	7	8
Decreases the chance of getting colic?	1	2	3	4	5	6	7	8
Does not require that you watch what you eat or drink?	1	2	3	4	5	6	7	8

END1 We want to thank you for participating in this interview. You have been a tremendous help in our study. We would like to interview you two more times. The next time will be about one month before your baby is due. Let's see, that will be in [MONTH] and the second time will be about four months after your baby is born. These interviews will be conducted over the phone, or if you do not have a phone, I will come to your home. You will also receive a gift for doing these interviews with me. Where will I be able to reach you in [MONTH]?

END2 Unfortunately in order to be eligible for this study, we must know your expected due date. We cannot conduct this interview without this information. Thank you for your time.
[INTERVIEWER: ALTHOUGH THIS CASE WILL BE TAKEN OUT OF THE SAMPLE, IT IS IMPORTANT TO SEND IT TO THE CENTRAL OFFICE. DO NOT FILL OUT LOCATING INFORMATION NOR GIVE THE RESPONDENT A GIFT.]

[INTERVIEWER COMPLETE I1 -I6 AFTER ENDING INTERVIEW.]

11. WAS THE INTERVIEW CONDUCTED IN....

PRIVATE	1
(NO OUTSIDE INFLUENCES)	
SEMI-PRIVATE	2
(A FEW OUTSIDE INFLUENCES)	
NOT PRIVATE	3
(OTHERS MAY HAVE CAUSED BIAS RESULTS)	

12. IN WHICH LANGUAGE WAS THE INTERVIEW CONDUCTED?

ENGLISH	1
SPANISH	2
CREOLE	3

13. DATE OF INTERVIEW

_____	_____	_____
MONTH	DAY	YEAR

14. MAIN SITE

|_____|

15. DELIVERY CLINIC

|_____|

16 WAS THIS INTERVIEW COMPLETED . . .

BY PHONE	1
IN PERSON	2

End Date: _____ Time: ____:____
(This time should be after locating form is completed)

APPENDIX B

SUPPLEMENTARY EXHIBITS

Exhibit B1

Beliefs About Advantages and Disadvantages of Breastfeeding and Bottle Feeding

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Bottle feeding increases chances that the baby will have colic</i>							
Strongly agree	23.8%	12.8%	9.0%	9.3%	6.7%	5.0%	11.7%
Agree	46.8	27.5	21.3	21.3	19.7	15.3	26.2
Somewhat agree	7.8	18.0	21.0	19.3	28.0	25.0	19.2
Somewhat disagree	5.3	6.5	13.8	16.3	14.3	11.7	10.9
Disagree	9.0	16.0	17.8	19.0	20.7	22.7	17.0
Strongly disagree	1.0	3.8	4.3	5.3	6.7	5.0	4.1
Don't know	6.5	15.5	13.0	9.3	4.0	15.3	10.8
<i>Breastfeeding is a very convenient method of feeding baby</i>							
Strongly agree	33.3%	26.5%	28.5%	25.7%	26.7%	18.7%	27.0%
Agree	50.8	37.5	36.0	34.3	35.3	33.3	38.4
Somewhat agree	6.8	14.3	18.8	18.7	17.3	16.0	15.0
Somewhat disagree	2.5	7.5	5.5	6.7	7.3	9.3	6.3
Disagree	5.3	8.0	8.5	9.0	8.3	17.7	9.1
Strongly disagree	0.3	3.0	2.0	4.3	4.3	4.0	2.8
Don't know	1.3	3.3	0.8	1.3	0.7	1.0	1.4
<i>Breastfeeding helps protect baby against infection</i>							
Strongly agree	40.0%	44.8%	39.5%	43.7%	41.3%	38.0%	41.2%
Agree	50.0	32.0	36.0	32.0	30.3	37.0	36.7
Somewhat agree	4.5	8.3	12.0	11.3	15.7	12.0	10.3
Somewhat disagree	2.0	4.3	4.5	4.3	4.0	3.0	3.7
Disagree	1.5	6.3	3.8	5.0	6.3	5.3	4.6
Strongly disagree	0.3	0.8	1.3	0.0	1.7	0.7	0.8
Don't know	1.8	3.8	3.0	3.7	0.7	4.0	2.8

Exhibit B1 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites (n = 2100)
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	
<i>Breastfeeding helps mother feel closer to baby</i>							
Strongly agree	38.0%	49.5%	51.5%	48.0%	50.7%	44.3%	46.9%
Agree	51.0	36.5	29.5	31.3	29.7	35.7	36.1
Somewhat agree	5.5	6.8	11.5	11.3	11.7	11.7	9.5
Somewhat disagree	2.8	2.3	1.8	4.0	4.0	2.7	2.8
Disagree	1.8	1.8	3.3	4.3	2.3	4.0	2.8
Strongly disagree	0.0	1.0	1.0	0.3	0.7	0.3	0.6
Don't know	1.0	2.3	1.5	0.7	1.0	1.3	1.3
<i>Breastfeeding helps mother lose weight</i>							
Strongly agree	19.5%	17.3%	17.0%	17.7%	18.0%	13.0%	17.2%
Agree	30.8	22.5	21.5	26.0	17.3	20.3	23.3
Somewhat agree	12.8	15.5	19.5	20.7	24.3	20.0	18.4
Somewhat disagree	10.3	6.5	10.8	9.0	17.3	9.7	10.4
Disagree	12.3	17.5	17.5	12.3	14.0	19.0	15.5
Strongly disagree	0.5	2.5	3.5	4.0	4.0	3.0	2.8
Don't know	14.0	18.3	10.3	10.3	5.0	15.0	12.4
<i>Bottle feeding provides incomplete nourishment for baby</i>							
Strongly agree	13.3%	6.0%	4.8%	3.3%	5.3%	5.0%	6.5%
Agree	40.5	17.0	13.0	14.7	12.0	14.7	19.3
Somewhat agree	16.3	14.3	18.8	22.7	22.7	20.7	18.8
Somewhat disagree	9.8	21.3	23.8	20.0	18.7	17.0	18.4
Disagree	14.8	28.5	31.8	31.0	30.0	29.7	27.2
Strongly disagree	1.3	6.8	5.5	5.0	9.3	8.0	5.8
Don't know	4.3	6.3	2.5	3.3	2.0	5.0	4.0

Exhibit B1 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Bottle feeding makes it easier for other family members to be involved in feeding baby</i>							
Strongly agree	17.3%	30.5%	30.0%	34.7%	44.7%	38.3%	31.6%
Agree	52.8	54.3	54.8	51.0	41.3	50.3	51.2
Somewhat agree	14.8	7.3	8.5	9.0	7.3	7.3	9.2
Somewhat disagree	4.8	2.5	3.3	1.3	2.3	1.3	2.7
Disagree	6.3	3.0	2.5	2.7	2.7	1.3	3.2
Strongly disagree	1.3	2.0	1.0	1.0	1.3	1.3	1.3
Don't know	3.0	0.5	0.0	0.3	0.3	0.0	0.8
<i>Breastfeeding is embarrassing for the mother</i>							
Strongly agree	6.0%	4.0%	4.5%	5.7%	5.7%	7.3%	5.4%
Agree	14.8	9.8	6.3	9.0	8.0	11.3	9.9
Somewhat agree	11.8	15.0	16.8	17.7	19.7	22.0	16.8
Somewhat disagree	8.8	8.5	11.5	7.0	15.3	9.7	10.0
Disagree	45.3	39.0	37.8	36.3	29.7	32.0	37.2
Strongly disagree	12.5	21.8	21.5	24.3	21.3	16.7	19.5
Don't know	1.0	2.0	1.8	0.0	0.3	1.0	1.1
<i>Breastfeeding makes it difficult for the mother to go out</i>							
Strongly agree	11.5%	7.0%	8.0%	8.0%	10.7%	10.7%	9.2%
Agree	28.0	18.0	19.8	23.0	16.3	23.0	21.4
Somewhat agree	11.5	18.0	23.0	22.7	24.0	19.3	19.4
Somewhat disagree	9.8	10.8	11.3	8.3	16.3	12.3	11.3
Disagree	30.5	33.0	30.8	25.7	23.7	26.0	28.7
Strongly disagree	6.5	12.0	6.8	10.3	8.7	7.3	8.6
Don't know	2.3	1.3	0.5	2.0	0.3	1.3	1.3

Exhibit B1 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites (n = 2100)
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	
<i>It is difficult to breastfeed successfully</i>							
Strongly agree	10.0%	2.8%	2.3%	4.3%	3.0%	2.3%	4.2%
Agree	20.0	9.0	7.3	10.0	10.0	10.0	11.2
Somewhat agree	12.0	13.3	9.8	16.0	18.7	15.3	13.8
Somewhat disagree	8.3	10.5	18.5	12.0	22.0	14.0	14.0
Disagree	32.0	42.3	42.8	34.0	29.3	42.3	37.4
Strongly disagree	8.0	13.0	13.5	14.3	13.3	8.0	11.7
Don't know	9.8	9.3	6.0	9.3	3.7	8.0	7.8
<i>Bottle feeding makes it easier for the mother to go to work or school</i>							
Strongly agree	15.8%	24.8%	17.0%	20.7%	28.0%	22.3%	21.1%
Agree	56.0	46.3	54.3	52.7	46.7	57.0	52.1
Somewhat agree	13.5	9.8	15.8	14.3	13.3	13.7	13.3
Somewhat disagree	5.8	4.8	3.5	4.7	4.0	2.0	4.2
Disagree	6.0	10.3	7.8	5.3	6.0	3.0	6.6
Strongly disagree	2.0	3.3	1.3	2.3	1.7	1.7	2.0
Don't know	1.0	1.0	0.5	0.0	0.3	0.3	0.6
<i>Breast milk is the best nourishment for baby</i>							
Strongly agree	44.5%	49.5%	52.3%	49.0%	56.3%	48.7%	49.9%
Agree	41.3	38.5	34.8	38.0	28.0	38.3	36.7
Somewhat agree	7.5	4.3	8.0	8.7	8.7	6.7	7.2
Somewhat disagree	2.3	1.5	2.5	1.7	3.7	2.3	2.3
Disagree	2.8	3.0	1.5	1.3	1.3	2.0	2.0
Strongly disagree	0.5	0.8	0.0	0.3	1.0	0.3	0.5
Don't know	1.3	2.5	1.0	1.0	1.0	1.7	1.4

Exhibit B1 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Bottle feeding is an expensive method of feeding</i>							
Strongly agree	15.5%	28.8%	19.3%	23.0%	34.3%	25.7%	24.0%
Agree	43.8	41.3	44.8	40.0	31.3	47.0	41.6
Somewhat agree	14.8	16.0	22.0	22.3	21.3	15.0	18.4
Somewhat disagree	6.5	3.5	5.0	6.3	6.7	4.0	5.3
Disagree	13.3	7.3	6.8	6.0	5.0	6.0	7.6
Strongly disagree	1.5	2.0	1.0	1.3	0.7	0.7	1.2
Don't know	4.8	1.3	1.3	1.0	0.7	1.7	1.9
<i>Bottle feeding is a trouble free method of feeding</i>							
Strongly agree	10.3%	5.5%	2.3%	5.0%	7.3%	5.3%	6.0%
Agree	45.0	20.3	15.3	18.3	20.3	17.7	23.4
Somewhat agree	12.8	18.0	27.0	17.7	22.0	17.7	19.2
Somewhat disagree	9.8	16.3	25.3	17.7	25.7	23.3	19.3
Disagree	14.5	31.5	24.3	32.7	21.7	30.3	25.5
Strongly disagree	2.5	5.5	3.0	6.7	2.0	4.7	4.0
Don't know	5.3	3.0	3.0	2.0	1.0	1.0	2.7
<i>Bottle feeding allows one to see exactly how much milk baby has had</i>							
Strongly agree	19.3%	17.0%	13.5%	12.7%	26.3%	18.7%	17.7%
Agree	63.5	68.3	68.3	69.0	54.3	71.7	66.0
Somewhat agree	8.5	9.3	15.0	13.7	15.7	8.3	11.6
Somewhat disagree	2.5	1.3	2.3	1.3	1.0	0.7	1.6
Disagree	4.5	3.5	0.5	2.7	1.7	0.3	2.3
Strongly disagree	0.5	0.3	0.3	0.3	0.0	0.0	0.2
Don't know	1.3	0.5	0.3	0.3	1.0	0.3	0.6

Exhibit B1 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	
<i>Breastfeeding requires the mother to watch what she eats and drinks</i>							
Strongly agree	31.0%	36.8%	40.8%	36.3%	50.7%	38.7%	38.6%
Agree	55.8	54.0	51.5	53.3	39.3	54.0	51.7
Somewhat agree	6.3	4.0	3.5	6.3	6.0	5.3	5.1
Somewhat disagree	2.5	0.8	1.5	0.7	1.7	0.7	1.3
Disagree	2.3	2.3	1.5	0.7	1.0	0.7	1.5
Strongly disagree	0.8	0.8	0.5	1.0	0.3	0.0	0.6
Don't know	1.5	1.5	0.8	1.7	1.0	0.7	1.2

Exhibit B2

Relative Importance of Advantages and Disadvantages of Breastfeeding and Bottle Feeding

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)

How important is it that the feeding method you choose...

Is convenient?

Extremely important	40.0%	22.5%	18.8%	17.3%	24.7%	20.3%	24.4%
Very important	40.5	43.5	41.3	41.7	38.3	36.7	40.5
Somewhat important	10.8	24.8	30.3	28.7	28.3	36.0	25.8
Somewhat unimportant	2.5	2.8	1.8	4.7	3.0	1.7	2.7
Not very important	2.8	4.0	6.0	5.7	2.7	3.7	4.1
Not important	0.5	1.8	2.0	2.0	2.3	1.7	1.7
Don't know	3.0	0.8	0.0	0.0	0.7	0.0	0.8

Helps protect baby against infection?

Extremely important	50.5%	59.8%	59.5%	61.3%	65.3%	60.0%	59.0%
Very important	44.8	36.0	34.0	33.7	28.7	32.7	35.4
Somewhat important	3.0	2.8	5.8	3.7	5.3	7.0	4.5
Somewhat unimportant	0.5	0.8	0.0	0.3	0.3	0.0	0.3
Not very important	0.5	0.0	0.3	0.3	0.0	0.3	0.2
Not important	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Don't know	0.8	0.5	0.5	0.7	0.3	0.0	0.5

Exhibit B2 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Helps you feel closer to baby?</i>							
Extremely important	43.8%	46.5%	44.5%	45.3%	49.0%	38.0%	44.6%
Very important	49.5	41.5	44.0	45.7	40.7	45.7	44.6
Somewhat important	4.5	9.8	8.8	8.0	8.7	14.0	8.8
Somewhat unimportant	0.8	0.8	1.3	0.3	0.7	0.0	0.7
Not very important	1.0	1.0	0.8	0.3	0.0	1.7	0.8
Not important	0.0	0.0	0.3	0.0	0.7	0.3	0.2
Don't know	0.5	0.5	0.5	0.3	0.3	0.3	0.4
<i>Helps you lose weight?</i>							
Extremely important	16.0%	12.3%	11.0%	10.7%	11.3%	13.3%	12.5%
Very important	33.8	16.0	13.3	18.3	13.0	12.0	18.2
Somewhat important	20.5	30.3	31.3	32.7	32.7	27.7	28.9
Somewhat unimportant	8.8	9.5	12.8	11.7	13.3	13.3	11.4
Not very important	14.8	21.3	19.5	16.0	16.7	20.0	18.1
Not important	3.3	9.8	10.3	9.7	12.7	13.3	9.5
Don't know	3.0	1.0	2.0	1.0	0.3	0.3	1.4
<i>Provides complete nourishment for baby?</i>							
Extremely important	44.3%	68.8%	67.3%	63.3%	72.0%	68.3%	63.4%
Very important	43.0	28.8	29.8	32.7	22.0	27.3	31.0
Somewhat important	8.5	1.8	2.5	3.0	5.3	4.3	4.2
Somewhat unimportant	2.0	0.3	0.3	0.3	0.3	0.0	0.6
Not very important	0.5	0.3	0.3	0.0	0.0	0.0	0.2
Not important	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	1.5	0.3	0.0	0.7	0.3	0.0	0.5

Exhibit B2 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites (n = 2100)
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	
<i>Allows baby's father or other family members to feed baby?</i>							
Extremely important	15.3%	22.3%	17.3%	18.7%	26.0%	19.0%	19.5%
Very important	44.5	42.3	45.0	41.3	40.7	48.7	43.8
Somewhat important	21.0	27.0	28.0	32.3	24.0	24.0	26.0
Somewhat unimportant	7.8	3.3	3.5	2.3	5.0	4.7	4.5
Not very important	8.8	3.8	4.0	4.3	3.3	2.0	4.5
Not important	1.3	1.3	2.0	1.0	0.7	1.7	1.3
Don't know	1.5	0.3	0.3	0.0	0.3	0.0	0.4
<i>Does not make you feel embarrassed?</i>							
Extremely important	11.0%	17.0%	9.3%	9.0%	9.3%	11.3%	11.3%
Very important	22.5	19.0	13.3	17.0	13.3	18.3	17.4
Somewhat important	14.5	27.3	29.5	26.7	28.3	28.7	25.5
Somewhat unimportant	12.5	8.3	13.0	13.7	16.7	10.3	12.2
Not very important	28.0	13.5	19.3	20.0	13.3	16.0	18.6
Not important	10.5	14.0	15.3	13.0	18.7	15.0	14.2
Don't know	1.0	1.0	0.5	0.7	0.3	0.3	0.7
<i>Allows you to go out socially?</i>							
Extremely important	7.5%	5.5%	3.8%	1.7%	5.7%	6.7%	5.2%
Very important	25.5	9.8	9.5	10.7	10.0	11.0	13.0
Somewhat important	16.5	35.0	31.8	24.7	27.7	30.3	27.7
Somewhat unimportant	15.0	12.0	18.0	17.3	16.7	15.3	15.6
Not very important	26.3	25.3	25.8	29.7	21.3	22.0	25.1
Not important	7.5	12.0	11.0	16.0	18.3	14.7	12.8
Don't know	1.8	0.5	0.3	0.0	0.3	0.0	0.5

Exhibit B2 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Makes it easy for you to go to work or school?</i>							
Extremely important	12.3%	17.0%	9.8%	12.0%	14.3%	13.7%	13.1%
Very important	39.3	33.5	30.8	29.7	30.0	31.0	32.7
Somewhat important	23.5	32.0	42.0	34.0	33.0	36.3	33.3
Somewhat unimportant	9.5	5.0	5.5	7.0	11.0	4.0	7.0
Not very important	11.3	7.8	6.8	12.0	5.0	8.7	8.6
Not important	4.0	4.3	5.3	5.3	6.0	6.0	5.0
Don't know	0.3	0.5	0.0	0.0	0.7	0.3	0.3
<i>Is trouble free?</i>							
Extremely important	14.5%	12.0%	7.5%	6.7%	10.7%	9.7%	10.3%
Very important	37.3	23.3	19.3	21.3	21.0	18.7	23.9
Somewhat important	19.8	34.3	30.8	31.3	31.3	34.0	30.0
Somewhat unimportant	10.0	8.5	17.5	12.3	14.3	10.0	12.1
Not very important	12.8	13.8	16.5	17.7	13.3	18.3	15.2
Not important	4.0	8.0	7.5	10.3	9.0	8.3	7.7
Don't know	1.8	0.3	1.0	0.3	0.3	1.0	0.8
<i>Is inexpensive?</i>							
Extremely important	13.8%	21.0%	13.8%	16.0%	14.7%	10.0%	15.0%
Very important	41.3	31.0	29.0	23.0	25.0	31.0	30.6
Somewhat important	19.0	33.3	36.3	37.3	34.0	38.0	32.5
Somewhat unimportant	9.0	4.0	8.3	6.7	10.3	7.3	7.5
Not very important	12.5	7.3	9.3	11.3	9.0	8.0	9.6
Not important	2.8	3.0	3.5	5.0	6.3	5.3	4.1
Don't know	1.8	0.5	0.0	0.7	0.7	0.3	0.7

Exhibit B2 (continued)

	Southeast		Mountain Plains		Midwest		All Study Sites
	Site 1	Site 2	Site 1	Site 2	Site 1	Site 2	
	(n = 400)	(n = 400)	(n = 400)	(n = 300)	(n = 300)	(n = 300)	(n = 2100)
<i>Allows you to see exactly how much milk baby has had?</i>							
Extremely important	21.0%	16.8%	14.3%	11.3%	18.3%	13.3%	16.0%
Very important	47.8	34.8	32.5	35.3	38.0	38.0	37.8
Somewhat important	20.5	30.0	35.0	38.0	30.0	32.0	30.6
Somewhat unimportant	5.0	6.3	7.5	7.3	5.0	6.3	6.2
Not very important	4.5	9.8	8.5	5.0	5.0	8.0	6.9
Not important	0.5	1.5	2.3	2.7	3.0	2.3	2.0
Don't know	0.8	1.0	0.0	0.3	0.7	0.0	0.5
<i>Decreases the chance of getting colic?</i>							
Extremely important	33.8%	39.5%	34.0%	37.7%	37.3%	30.7%	35.5%
Very important	51.0	43.0	40.3	43.3	36.0	38.7	42.4
Somewhat important	9.5	12.3	17.3	13.7	19.0	19.0	14.8
Somewhat unimportant	1.8	1.0	2.5	1.0	4.3	2.7	2.1
Not very important	1.8	0.8	0.5	1.7	2.0	2.7	1.5
Not important	0.3	0.5	0.8	0.7	1.0	1.7	0.8
Don't know	2.0	3.0	4.8	2.0	0.3	4.7	2.9
<i>Does not require you to watch what you eat or drink?</i>							
Extremely important	21.3%	11.8%	6.5%	10.3%	12.0%	7.7%	11.8%
Very important	42.0	23.0	19.0	28.7	19.3	20.0	25.7
Somewhat important	14.3	24.0	25.8	21.7	23.0	26.0	22.3
Somewhat unimportant	8.5	8.5	15.0	8.0	14.7	14.0	11.3
Not very important	9.0	21.0	19.5	20.3	16.7	18.0	17.3
Not important	2.5	10.3	13.0	11.0	13.7	13.7	10.4
Don't know	2.5	1.5	1.3	0.0	0.7	0.7	1.2

Exhibit B3

Food Consumption Patterns by Prior WIC Participation

	Prior WIC Participation		
	No	Yes	All
	(n = 1301)	(n = 793)	(n = 2094)
<i>Over the past month, how often did you eat or drink...</i>			
<i>Milk?</i>			
Never	6.1%	7.6%	6.6%
1-2 times per month	7.0	6.3	6.7
1-2 times per week	9.1	11.2	9.9
3-6 times per week	12.3	11.3	11.9
1-2 times per day	40.0	40.4	40.1
3 or more times per day	25.5	23.2	24.6
<i>Cheese?</i>			
Never	9.0%	7.4%	8.4%
1-2 times per month	10.6	11.7	11.0
1-2 times per week	23.1	22.4	22.9
3-6 times per week	22.7	24.7	23.4
1-2 times per day	26.8	25.7	26.4
3 or more times per day	7.7	7.9	7.8
<i>Eggs?</i>			
Never	15.8%	12.5%	14.5%
1-2 times per month	17.7	15.8	17.0
1-2 times per week	29.7	30.3	29.9
3-6 times per week	19.4	23.5	20.9
1-2 times per day	15.7	16.4	16.0
3 or more times per day	1.7	1.6	1.7

Exhibit B3 (continued)

	Prior WIC Participation		
	No	Yes	All
	(n = 1301)	(n = 793)	(n = 2094)
<i>Tuna fish?</i>			
Never	48.0%	41.4%	45.5%
1-2 times per month	26.1	28.8	27.1
1-2 times per week	16.8	20.9	18.3
3-6 times per week	5.5	6.3	5.8
1-2 times per day	3.0	2.0	2.6
3 or more times per day	0.5	0.4	0.4
<i>Non-fried meat, chicken or fish (excluding tuna)?</i>			
Never	14.7%	10.3%	13.0%
1-2 times per month	11.4	12.7	11.9
1-2 times per week	25.7	23.2	24.8
3-6 times per week	22.5	27.2	24.3
1-2 times per day	23.4	24.7	23.9
3 or more times per day	1.9	1.6	1.8
<i>Fried foods such as fried chicken, fish or french fries?</i>			
Never	9.1%	11.6%	10.0%
1-2 times per month	13.4	13.9	13.6
1-2 times per week	31.2	31.3	31.2
3-6 times per week	25.0	24.7	24.9
1-2 times per day	18.6	16.6	17.9
3 or more times per day	2.8	1.9	2.4

Exhibit B3 (continued)

	Prior WIC Participation		
	No	Yes	All
	(n = 1301)	(n = 793)	(n = 2094)
<i>Peanut butter?</i>			
Never	44.0%	40.5%	42.6%
1-2 times per month	17.4	18.9	18.0
1-2 times per week	18.0	19.0	18.4
3-6 times per week	9.8	10.5	10.1
1-2 times per day	9.1	9.6	9.3
3 or more times per day	1.7	1.4	1.6
<i>100% fruit juice?</i>			
Never	12.8%	11.3%	12.2%
1-2 times per month	10.0	8.2	9.3
1-2 times per week	14.8	14.8	14.8
3-6 times per week	13.8	15.8	14.6
1-2 times per day	30.1	34.3	31.7
3 or more times per day	18.4	15.6	17.3
<i>Regular (not diet) soft drinks?</i>			
Never	16.5%	15.4%	16.1%
1-2 times per month	9.5	6.6	8.4
1-2 times per week	16.3	18.0	17.0
3-6 times per week	11.2	13.6	12.1
1-2 times per day	29.7	31.0	30.2
3 or more times per day	16.6	15.3	16.1

Exhibit B3 (continued)

	Prior WIC Participation		
	No	Yes	All
	(n = 1301)	(n = 793)	(n = 2094)
<i>Fruit (fresh, frozen or canned)?</i>			
Never	5.2%	5.7%	5.4%
1-2 times per month	8.9	6.8	8.1
1-2 times per week	18.8	18.3	18.6
3-6 times per week	18.8	20.9	19.6
1-2 times per day	35.6	37.2	36.2
3 or more times per day	12.6	11.1	12.0
<i>Vegetables, excluding legumes, (fresh, frozen or canned)?</i>			
Never	6.6%	4.9%	6.0%
1-2 times per month	7.2	7.4	7.3
1-2 times per week	19.9	18.3	19.3
3-6 times per week	23.8	22.8	23.4
1-2 times per day	37.0	41.6	38.8
3 or more times per day	5.4	4.9	5.2
<i>Legumes (dried beans and peas)?</i>			
Never	22.7%	21.1%	22.1%
1-2 times per month	19.1	16.4	18.1
1-2 times per week	30.7	29.8	30.4
3-6 times per week	16.3	16.6	16.4
1-2 times per day	9.8	14.4	11.5
3 or more times per day	1.3	1.8	1.5

Exhibit B3 (continued)

	Prior WIC Participation		
	No	Yes	All
	(n = 1301)	(n = 793)	(n = 2094)
<i>WIC breakfast cereals?</i>			
Never	21.1 %	15.6 %	19.0 %
1-2 times per month	10.8	10.1	10.6
1-2 times per week	17.4	18.2	17.7
3-6 times per week	16.5	19.8	17.8
1-2 times per day	32.5	34.6	33.3
3 or more times per day	1.5	1.8	1.6
<i>Cookies, cakes or pastries?</i>			
Never	16.6 %	16.5 %	16.6 %
1-2 times per month	18.3	18.3	18.3
1-2 times per week	28.8	32.0	30.0
3-6 times per week	14.0	12.0	13.2
1-2 times per day	18.1	17.5	17.9
3 or more times per day	4.1	3.5	3.9
<i>Candy (any type)?</i>			
Never	28.0 %	28.0 %	28.0 %
1-2 times per month	19.1	24.2	21.0
1-2 times per week	23.1	20.8	22.2
3-6 times per week	10.9	11.2	11.0
1-2 times per day	13.7	12.1	13.1
3 or more times per day	4.9	3.4	4.3

Exhibit B3 (continued)

	Prior WIC Participation		
	No	Yes	All
	(n = 1301)	(n = 793)	(n = 2094)
<i>Snacks, such as chips, pretzels, packaged popcorn?</i>			
Never	18.5 %	19.5 %	18.9 %
1-2 times per month	15.7	16.4	16.0
1-2 times per week	29.1	33.3	30.7
3-6 times per week	16.4	14.5	15.7
1-2 times per day	16.8	13.0	15.3
3 or more times per day	3.5	3.2	3.4